

“NORTH TO ALASKA”:
The Geostrategic Importance of the Last Frontier

BY

KATHLEEN A. COOPER, Maj, USAF

A THESIS PRESENTED TO THE FACULTY OF
THE SCHOOL OF ADVANCED AIR AND SPACE STUDIES
FOR COMPLETION OF GRADUATION REQUIREMENTS

SCHOOL OF ADVANCED AIR AND SPACE STUDIES

AIR UNIVERSITY

MAXWELL AIR FORCE BASE, ALABAMA

JUNE 2012

APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

Dr. JAMES M. TUCCI

Dr. RICHARD R. MULLER

DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University. In accordance with Air Force Instruction 51-303, it is not copyrighted, but is the property of the United States government.



ABOUT THE AUTHOR

Major Kathleen Cooper entered the Air Force in 1990 as a Mental Health technician. Her assignments included Wiesbaden Medical Center in Germany and Luke Air Force Base, Arizona. She received her commission in 1999 at the Officer Training School at Maxwell Air Force Base, Alabama. Major Cooper has served as a Space and Missile evaluator and instructor. Her operational assignments include Minot Air Force Base, North Dakota and Clear Air Force Station, Alaska. She served on the staffs of Eleventh Air Force at Elmendorf Air Force Base, Alaska, the Air Force Operational Test and Evaluation Center at Kirtland Air Force Base, New Mexico, and Headquarters, Pacific Air Forces at Hickam Air Force Base, Hawaii. She has master's degrees in Business Administration from the University of Phoenix and Military Operational Art and Science from Air Command and Staff College. Following SAASS, Major Cooper has an assignment to US Strategic Command in Omaha, Nebraska.



ACKNOWLEDGMENTS

I would like to acknowledge several people whose support and help contributed to this study. Many thanks to General Carrol H. Chandler, former Commander, Pacific Air Forces for hiring me to his staff in Alaska and Hawaii. The experience in the Pacific sparked the thesis on Alaska.

The SAASS faculty and students provided constant inspiration and encouragement. Dr. James Tucci, my advisor, recognized the importance of this topic and provided valuable guidance that contributed to the thesis development. Dr. Richard Muller offered his perspective during discussions and provided feedback that shaped the final product. Dr. Tucci, Dr. Muller, and Dr. James Forsyth continually motivated me with their humor, patience and support throughout the entire SAASS program. Colonel Timothy Schultz took great care and interest in the class and our families and ensured we gained the necessary skills to complete the program. SAASS seminars and lunchtime discussions with Class XXI were priceless.

My thoughtful husband and three awesome kids continually remind me how blessed I am because of their love and support. I am eternally grateful and look forward to our next challenge together.

ABSTRACT

General William L. “Billy” Mitchell proclaimed on 11 February 1935 that Alaska was the “most strategic place in the world.” This study investigates Mitchell’s claim by examining three periods: 1913-1945, the Cold War era, and contemporary Alaska. By evaluating Alaska’s strategic significance in relation to its geographic location, the role of airpower, and examining investments in military infrastructure, an assessment of Mitchell’s claim is possible. The results of this study indicate that Alaska continues to be vital to US interests. However, investing in Alaska historically required fierce advocates that had to convince policymakers of the state’s strategic importance. This paper shows that an investment in security and funding exploration and exploitation of Alaska’s natural resources provide the US considerable returns. Parallels to establishing air infrastructure in Alaska early in the 20th century can be made to the situation today. The Alaskan Arctic environment is changing and building new infrastructure will be a costly process. Additionally, climate change has created geopolitical concerns among the Arctic nations. Alaska is the US link to Arctic natural resources and this state provides critical air and missile defense for the nation. The rise of Russian Arctic power and China’s interest in the Arctic are noteworthy. The region will continue to be of great strategic interest.

CONTENTS

Chapter	Page
APPROVAL.....	i
DISCLAIMER.....	ii
ABOUT THE AUTHOR.....	iii
ACKNOWLEDGEMENTS.....	iv
ABSTRACT.....	v
INTRODUCTION.....	1
1 ALASAKAN AIR POWER: 1913-1945.....	5
2 ALASKA AND THE COLD WAR: 1945-1991.....	28
3 CONTEMPORARY ALASKA.....	45
4 CONCLUSION.....	77
BIBLIOGRAPHY.....	82

Illustrations

Table

1 Lend-Lease Aircraft Deliveries: ALSIB Route 1942-1945.....	26
2 Intercepts by Year.....	36

Figure

1 Strategic Air Chart.....	16
2 ALSIB – The Northern Air Route.....	23
3 Arctic Region, Polar Projection Map.....	29
4 Alaskan AC&W and DEW Line System.....	34
5 White Alice Communications System.....	38

6	Average Monthly Arctic Sea Ice Extent.....	46
7	Arctic Borders and Claims.....	48
8	Natural Resources in the Arctic.....	56
9	Alaska's Rare Earth-Mineral Potential.....	59
10	Natural Petroleum Reserve-Alaska.....	60
11	Alaskan Oil Production in Decline.....	62
12	Northern Arctic Passages.....	64
13	Sea Trade Routes.....	65
14	JPARC Modernization/Enhancement EIS Proposal.....	70
15	Missile Defense Infrastructure Alaska.....	71
16	An Integrated Approach to Missile Defense.....	75

Introduction

The purchase of Alaska on 30 March 1867, once referred to as “Seward’s Folly,” remains one of the best investments in US history. For only \$7.2 million (two cents per acre), this change in ownership served both US and Russian interests. Secretary of State William H. Seward was a strategic visionary who sought to expand US territory, while Russia pursued a retrenchment strategy, seeking to relinquish the undeveloped and harsh territory of Alaska and recover from the debt of the failed Crimean War (1853-1856). Russian Minister Eduard de Stoeckl oversaw Russian interests. “On March 29, 1867, Stoeckl and Seward completed the draft of a treaty ceding Russian North America to the United States, and the treaty was signed early the following day.”¹ US ownership of Alaska was viewed as “inevitable and perhaps beneficial” by Russian political leaders.²

According to General William L. “Billy” Mitchell, “Russia thought by interposing the United States between her Siberian possessions and England’s Canadian possession, she would be placing a potential enemy of England, able to cope with her, between themselves.”³ The commencement of the American Civil War delayed the initial purchase of Alaska. However, Russia agreed to send a fleet to New York and San Francisco as a show of force in support of the US for a travel fee of \$6 million.⁴ Post-Civil War, Congress authorized payment of the Russian travel fees and provided \$1.2 million for the purchase of Alaska for a

¹ Alaska Purchase.” Encyclopedia Britannica. Encyclopedia Britannica Online Academic Edition. Encyclopedia Britannica Inc., 2012. Web, <http://www.britannica.com/EBchecked/topic/12326/Alaska-Purchase> (accessed 3 May, 2012).

² “Alaska Purchase.” Encyclopedia Britannica. This paragraph same source.

³ Brigadier General William Mitchell, *America, Air Power, and the Pacific*, 4. Call # 168.7419.30, IRIS # 01147594, undated manuscript, AFHRA, Maxwell AFB AL.

⁴ Mitchell, *America, Air Power, and the Pacific*, 4-5.

total of \$7.2 million⁵. Some 60 years after the Alaskan Purchase, General Billy Mitchell emerged as a leading advocate of Alaska's strategic importance.

This thesis examines whether Alaska is as strategically important today as when Mitchell made his proclamation in 1935. He stated to the House Military Affairs Committee, "I believe in the future he who holds Alaska will hold the world, and I think it's the most strategic place in the world."⁶ Mitchell was referring to the importance of basing aircraft in Alaska and its decisive proximity to Europe and Asia. Mitchell's opinion was shaped by his assignment to Alaska as a lieutenant, which exposed him to the wealth of abundant natural resources and the centrality of Alaska to America's interests in the Pacific theater.

This paper will test Mitchell's claim by analyzing the evolution of Alaskan airpower and the roles of military and civilian aviation from 1913 to 1945. The first chapter shows how airpower transformed Alaska. It also reveals how the colder Alaskan climate shaped the development of the air service's aircraft and operations. Highlighted is the critical geostrategic location of Alaska during World War II. The Aleutian Campaign against the Japanese and support of the Russians during the Lend Lease program, two operations centered on Alaska, were pivotal in securing an Allied victory in the war. The establishment of air routes and the Alaska-Canada Highway opened access to the Last Frontier and increased US global reach to other nations.

Next, an examination of Alaska and the importance of airpower post-World War II, through the Cold War years, provides additional insight to evaluating Mitchell's claim of Alaska's strategic importance.

⁵ Mitchell, *America, Air Power, and the Pacific*, 5. Mitchell stated total was \$7.4M not \$7.2M.

⁶ Quoted by John Haile Cloe, *The Air Force in Alaska, Part I, Early Flights and Strategic Importance: 1920-1940* (Elmendorf AFB, AK: Office of History, Alaskan Air Command, 1983), 64.

The strife between former allies Russia and the US altered the global balance of power for over 40 years. Alaska, next door to the Soviet Union, was in a prime strategic location to support the air and missile defense mission to protect the US homeland. The installation of the Distant Early Warning Line, White Alice Communications System, and the Ballistic Missile Early Warning Site at Clear Air Force Station signaled US resolve to deter Soviet threats. Additional investments in Alaska resulted in much of the infrastructure that remains today, which continues to support US military and commercial interests.

Finally, an assessment of contemporary Alaska and Alaskan-based military missions determines if the state's strategic importance has endured since 1935. With the end of the Cold War, new challenges have emerged such as climate change and rogue nations pursuing possession of nuclear missiles that may potentially threaten the US homeland. The melting of the Arctic polar ice cap may cause increased competition for scarce natural resources and territory. The result of this competition will affect who gets controls of the Northern sea routes. Because of Alaska's strategic location, the US has a vital interest in the Arctic and a role in resolving these issues. Further, Alaska's proximity has enabled US air and missile defense missions to adapt to the rogue nation threat by integrating key locations with the US Ballistic Missile Defense System.

The conclusion contains a summary of the historic periods and provides recommendations for the future, based on historical analysis and findings contained in the contemporary Alaska chapter. Extensive research and the evidence provided reveal that Mitchell's claim that Alaska is the "most strategic place in the world" remains true today.

The development of this thesis resulted from the review of over 100 primary and secondary sources. Records obtained from the Historical Research Agency at Maxwell Air Force Base, Alabama were the foundation of this research. A review of scholarly journals, monographs, online databases, and professional opinions also informed this analysis.

Experience at Elmendorf Air Force Base, Alaska on the Eleventh Air Force staff from 2003 to 2005 gave the author a truly unique perspective to the issue and awareness of the strategic importance of Alaska. Additionally, a remote assignment to Clear Air Force Station, Alaska, conducting Missile Warning and Space Surveillance from 2005 to 2006, helped to shape the author's operational Alaskan perspective.



Chapter 1

Alaskan Air Power: 1913-1945

Alaska is the most central place in the world for aircraft and that is true of Europe, Asia or North America. I believe, in the future, he who holds Alaska will hold the world, and I think it is the most strategic place in the world.

Brigadier William L. “Billy” Mitchell

General William “Billy” Mitchell’s assignment in Alaska from 1901 to 1903 as a young lieutenant was fortuitous. His team established the Washington-Alaska Military Cable and Telegraph System, which “opened up the territory to civilization.”¹ His experiences convinced him of the geostrategic importance of Alaska. He would later publicly advocate, in speeches and articles, about the importance of basing aircraft and establishing air routes throughout Alaska. Mitchell was convinced “with the coming of air power, Alaska [had] become the key point, strategically, of the Pacific.”²

The first introduction of aircraft to Alaskan territory was on 4 July 1913 by Mitchell’s friend James V. Martin.³ He conducted a flight over Fairbanks, Alaska in a Martin Tractor airplane to generate public interest.⁴ At that time, the people of Alaska relied on sled dogs, wagons, boats and limited automobiles for transportation. A remote and vast territory, Alaska is over 570,640 square miles.⁵ As Martin demonstrated, air transportation could and eventually would transform Alaska.

¹ Brigadier General William Mitchell, *The Strategic Key to the World*, 3. Call # 168.7419.30, IRIS # 01147595, undated manuscript, AFHRA, Maxwell AFB AL.

² Mitchell, *The Strategic Key to the World*, preface 2.

³ John Haile Cloe with Michael F. Monaghan, *Top Cover for America: The Air Force in Alaska, 1920-1983* (Missoula, MT: Anchorage Chapter-Air Force Association and Pictorial Publishing Company, 1984), 2.

⁴ Cloe, *Top Cover for America*, 2; “The Aviator,” The Early Birds of Aviation, Inc., <http://earlyaviators.com/emartja1.htm> (accessed 17 January 2012).

⁵ “Alaska: State and County Quick Facts,” US Census Bureau, 17 January 12, <http://quickfacts.census.gov/qfd/states/02000.html> (accessed 26 February 12).

In 1919, Mitchell wrote a personal letter to Colonel Henry H. Arnold stating “he was very anxious to push through a flight to Alaska with land planes.”⁶ Mitchell oversaw the Alaska Flying Expedition in 1920.⁷ Captain St. Clair Streett of the Black Wolf squadron led the round-trip journey from Mitchel Field, New York to Nome, Alaska.⁸ The official purpose of this flight was establishing an air route, testing the bi-motored aircraft (“evolved from modifications in the DH-4 airplane”), and photographing unmapped remote areas of Alaska.⁹ Captain Streett and the other pilots also had a purpose captured by the saying: “Yesterday a month was required to reach the Yukon; if our expedition exceeds, it will prove that the Yukon is but three days distant—by airplane!”¹⁰

Along the air route, the crews experienced flight mishaps, inadequate landing fields, and bad weather. One time en route North, one aircraft landed in a former dump in Portal Field, North Dakota.¹¹ Tires on one plane were cut-up by glass, and another plane’s tail skid broke.¹² Fortunately, the innovative crews quickly made the repairs. Part of a Ford axle fixed the tail skid.¹³ Later in the journey, Captain Streett had an in-flight emergency resulting in him leaving his seat to apply a fire extinguisher, while his mechanic took control of the plane.¹⁴ Fog, rain, and hail also made flying difficult and dangerous in the Northwest Territory. The rain combined with darkness made navigation

⁶ Brigadier William Mitchell, to Colonel Arnold, letter 27 December 1919. Murray Green, MICFILM 43796, IRIS #01102971, “Mitchell wants Arnold to Start Thinking about Alaskan and Round-the-World Flights-December 1919,” Mitchell L/C Box 7, AFHRA, Maxwell AFB AL.

⁷ Mitchell, *The Strategic Key to the World*, 3.

⁸ Cloe, *Top Cover for America*, 2.

⁹ Major General Chas. T. Menoher, Director of the Air Service, to Chief of Staff, memorandum, 8 April 1920, Call #168.7058-5, IRIS # 01008171, in the Lt C. C. Nutt Papers, AFHRA, Maxwell AFB AL.

¹⁰ Capt St. Clair Streett, “The First Alaskan Air Expedition,” *The National Geographic Magazine* XLI, no. 5, (May 1922): 499, Call #168.7058-5, IRIS # 01008171, in the Lt C. C. Nutt Papers, AFHRA, Maxwell AFB AL.

¹¹ Streett, “First Alaskan Air Expedition,” 513.

¹² Streett, “First Alaskan Air Expedition,” 513.

¹³ Streett, “First Alaskan Air Expedition,” 513.

¹⁴ Streett, “First Alaskan Air Expedition,” 537.

treacherous. On one stormy night, Captain Streett's "first glimpse of terra firma was a cliff, not below [him], but ahead of [him]!"¹⁵

This expedition provided the opportunity for the inhabitants of remote territories to see an airplane for the first time. The people of Jasper County in Canada had their first experience without incident.¹⁶ While in Seward, Alaska, one woman, a Mrs. Kemp, was greatly frightened when four planes flew overhead.¹⁷ She hid her children in the cellar, covered the trapdoor with a China hutch, and then armed herself with a six-gun and a 30-40 rifle.¹⁸ She remained convinced that these were "monsters," until a US Judge later informed her about the Alaska Flying Expedition.¹⁹

The people of Fairbanks were pleasantly surprised at the speed and distance covered by the expedition. During the days of the Gold Rush, the trip normally took over 1 1/2 years through the Yukon River compared to 50 hours by plane.²⁰ The Alaskan Flying Expedition crews flew 4,500 miles in 53 hours and 30 minutes at a maximum speed of 115 miles per hour in DeHavilands (DH-4Bs).²¹ These were modified vintage World War I airplanes.²² The four airplanes safely arrived in Nome, Alaska on 24 August.²³

The crew successfully accomplished the round trip flight, landing at Mitchel Field on 20 October.²⁴ They traveled "9,000 miles in just 112 hours of flying, with the same airplanes, the same motors, and the same

¹⁵ Streett, "First Alaskan Air Expedition," 539.

¹⁶ Streett, "First Alaskan Air Expedition," 520.

¹⁷ "Alaska Women Gets Six-Gun to Ward Off Airplanes, Thinks They are Great Birds of Prey," *Denver Post*, 25 Dec 20. Call #168.7058-5, IRIS #01008171, in the Lt C. C. Nutt Papers, AFHRA, Maxwell AFB AL.

¹⁸ "Alaska Women Gets Six-Gun to Ward Off Airplanes," *Denver Post*.

¹⁹ "Alaska Women Gets Six-Gun to Ward Off Airplanes," *Denver Post*.

²⁰ Streett, "First Alaskan Air Expedition," 550.

²¹ Streett, "First Alaskan Air Expedition," 499, 552.

²² Streett, "First Alaskan Air Expedition," 515.

²³ Streett, "First Alaskan Air Expedition," 552.

²⁴ Streett, "First Alaskan Air Expedition," 550.

spark-plugs.”²⁵ The crews took aerial photographs in only ten hours for \$1,500 dollars, saving the US Geological Survey \$10,000 dollars and about three years.²⁶ Lieutenant Clifford Nutt, one of the four pilots, stated the mission’s “success would establish a precedent for future military and commercial operations.”²⁷

Airplanes inspired economic dreams in Carl “Ben” Eielson, a former Air Service pilot. He began an air service business in 1922 in Fairbanks based on the former military Curtiss JN-4D airplane, commonly referred to as the “Jenny.”²⁸ His business included transporting, guiding, and mail delivery. He made the first airmail delivery in Alaska on 21 February 1924.²⁹ A delivery that averaged 18 days by sled dog was only three hours by air.³⁰ Eielson encouraged aviation developments and accomplished many firsts leading the way for commercial investments.

Eielson and George Hubert Wilkins, an Australian Arctic explorer, achieved much recognition for their Arctic flight from Point Barrow, on the north coast of Alaska, to Spitsbergen, a Norwegian island north of Scandinavia, which took 20 hours and 20 minutes.³¹ The flight “demonstrate[d] the practicality of an international air route across the polar regions.”³² Because of this aerial accomplishment, the North Dakota National Guard promoted Eielson to Colonel and awarded him

²⁵ Streett, “First Alaskan Air Expedition,” 552.

²⁶ “Army Flight to Alaska,” *Flying*, August 1920, 450. August 1920, Call #168.7058-5, IRIS # 01008171, in the Lt C. C. Nutt Papers, AFHRA, Maxwell AFB AL.

²⁷ Lt C. C. Nutt, “Alaskan Flying Expedition,” [1921], 117. Call #168.7058-5, IRIS # 01008171, in the Lt C. C. Nutt Papers, AFHRA, Maxwell AFB AL.

²⁸ John Haile Cloe, *The Air Force in Alaska, Part I, Early Flights and Strategic Importance: 1920-1940* (Elmendorf AFB, AK: Office of History, Alaskan Air Command, 1983), vi, 12.

²⁹ Cloe, *Air Force in Alaska, Part I*, 12.

³⁰ Cloe, *Top Cover for America*, 6.

³¹ Cloe, *Air Force in Alaska, Part I*, 13-14; Cloe, *Top Cover for America*, 7.

³² Cloe, *Air Force in Alaska, Part I*, 14; Cloe, *Top Cover for America*, 7.

the Distinguished Flying Cross.³³ Eielson and Wilkins' achievements demonstrate how military and commercial airpower shaped Alaska.

Mitchell's prediction to Arnold in his letter in 1919 came true. The 1920 flight did "develop into a round-the world flight."³⁴ In 1924, Mitchell organized the Douglas World Cruisers 4-ship flight.³⁵ "Again, Alaska, because of its strategic location on the air map of the world, would figure prominently in his plans."³⁶ This around-the-world flight, conducted by the US Army Air Service, began on 6 April 1924 and officially ended almost six months later on 28 September.³⁷ The planes were named the *Seattle*, *Chicago*, *New Orleans*, and *Boston*.³⁸

The route began in Seattle and then went through Prince Rupert, Sitka, Seward, Chignik, Dutch Harbor, Nazan Bay, Atka, Chichagof Harbor, Attu, across the Kurile Islands to Japan, through southern Asia, Europe, North Atlantic and ended back in Seattle.³⁹ The flight covered 26,345 miles in 363 flight hours and 7 minutes, averaging 72.5 miles per hour.⁴⁰ Building on the Alaska Flying Expedition lessons and utilizing three of the previous pilots from that expedition as advance crews, Mitchell proved that airpower could extend America's global reach.⁴¹

The Alaska portion of the trip caused numerous difficulties for Major Frederick L. Martin, the mission lead. He experienced engine trouble and an unfortunate meeting with an Alaskan mountain.⁴² He and his mechanic survived, but that was the end of the *Seattle*'s

³³ Cloe, *Air Force in Alaska*, Part I, 16; Cloe, *Top Cover for America*, 7.

³⁴ Mitchell, letter 27 December 1919.

³⁵ Cloe, *Air Force in Alaska*, Part I, 20.

³⁶ Cloe, *Air Force in Alaska*, Part I, 20.

³⁷ Mudge A. Ransom, *Alaska Leg: United States Army Air Service First Around the World Flight, April 6, 1924 to September 28, 1924*. Call #167.401-27, IRIS #00120741, Published in 1965 commemorating the flight, AFHRA, Maxwell AFB AL.

³⁸ F. A. Zeuslar, "A Summary of the Flight from Seattle to the Commander Islands," 1. *Alaska Leg: United States Army Air Service First Around the World Flight, April 6, 1924 to September 28, 1924*. Call #167.401-27, IRIS #00120741, Published in 1965 commemorating the flight, AFHRA, Maxwell AFB AL.

³⁹ Cloe, *Top Cover for America*, 8-9.

⁴⁰ Zeuslar, "Summary of the Flight from Seattle," 6.

⁴¹ Cloe, *Top Cover for America*, 8

⁴² Zeuslar, "Summary of the Flight from Seattle," 3-4.

journey.⁴³ The Coast Guard cutters USCGC *Haida* and USCGC *Algonquin* provided invaluable support recovering Major Martin and aiding the other three crews through the Alaska portion of their trip.⁴⁴ Mitchell remarked, “These airplanes flew through Alaska and again it was demonstrated to anyone with an eye to the future and conversant with world conditions that it was of the utmost importance for us to establish our airways there at the earliest possible moment. However, conservatism, ignorance, and lack of foresight have prevented it up to this time.”⁴⁵

Mitchell later wrote, “Since the World Fliers went through the Aleutian Islands and down the Kuriles, the Japanese have paid special attention to the northern route.”⁴⁶ He stated “they are deathly afraid of an air attack through Alaska,” not an attack through Hawaii or the Philippines.⁴⁷ Mitchell advocated for a permanent air presence in Alaska and noted that neither the US Army nor Navy had taken any actions to defend Alaska.⁴⁸ In one of Mitchell’s reports, he “predicted that Japan would strike the US without warning and the Aleutian Islands would become a major theater of operations.”⁴⁹

War Plan Orange, originally conceived in 1890, was a Pacific defense plan in case of war with Japan.⁵⁰ Plan Orange updates included Alaska in a strategic triangle with Panama and Hawaii in 1928, 1938,

⁴³ Zeuslar, “Summary of the Flight from Seattle,” 4.

⁴⁴ Mason M. Patrick, Chief of Air Service, War Department, to Rear Admiral Frederick C. Billard, Commandant, Coast Guard, Treasury Department, Washington D.C., memorandum, 28 May 1924. Call #167.401-27, IRIS #00120741, Published in 1965 commemorating the flight, AFHRA, Maxwell AFB AL.

⁴⁵ Quoted in Cloe, *Top Cover for America*, 9.

⁴⁶ Brigadier General William Mitchell, *America, Air Power, and the Pacific*, 5. Call # 168.7419.30, IRIS # 01147594, undated manuscript, AFHRA, Maxwell AFB AL.

⁴⁷ Mitchell, *America, Air Power, and the Pacific*, 5.

⁴⁸ Mitchell, *America, Air Power, and the Pacific*, 6.

⁴⁹ Cloe, *Top Cover for America*, 9.

⁵⁰ “War Plan Orange,” Global Security.org, 7 May 2011, <http://www.globalsecurity.org/military/ops/war-plan-orange.htm> (accessed 16 February 2012).

but then the focus shifted away from Alaska in 1942.⁵¹ "American strategy in the Pacific, [Brigadier General Stanley D. Embick] insisted, should concentrate on holding the strategic triangle, Alaska-Hawaii-Panama. Such a course would place the United States in an invulnerable position and permit its military and naval forces to conduct operations in such a manner that will promise success instead of national disaster."⁵² However, Alaska would remain a low economic priority of the strategic triangle, until a crisis ensued.⁵³ An Alaska tragedy captured the Air Service's attention and was the impetus for change.

In 1929, Eielson and his partner Joe Crosson established Alaska Airways.⁵⁴ The company provided recovery services for Swenson Fur and Trading Corporation on the Siberian Coast.⁵⁵ On 9 November 1929, Eielson and his mechanic, Earl Borland died in a plane crash on one of the personnel and fur recovery missions.⁵⁶ Harsh weather conditions made search and rescue operations difficult. On 27 January 1930 because of the efforts of Alaskan, Canadian, and Russian pilots, the bodies of Eielson and Borland were recovered.⁵⁷ Despite not being recognized by the US, the Soviet Union still provided assistance.⁵⁸ Unfortunately, the U.S. Army Air Corps was unable to participate in the recovery efforts.⁵⁹ The Air Corps had no pilots trained in Arctic

⁵¹ Cloe, *Air Force in Alaska, Part I*, 39 and 89. Referencing Joint Army-Navy War Plan Orange, 27 June 1928, 1938, 1942.

⁵² Quoted in U.S. Army in World War II: The War in the Pacific, Strategy and Command, the First Two Years, <http://www.ibiblio.org/hyperwar/USA/USA-P-Strategy/Strategy-1.html#cn41>.

⁵³ Cloe, *Air Force in Alaska: Part I*, 39.

⁵⁴ Cloe, *Air Force in Alaska: Part I*, 16.

⁵⁵ Cloe, *Air Force in Alaska: Part I*, 16.

⁵⁶ Cloe, *Air Force in Alaska: Part I*, 16.

⁵⁷ Cloe, *Air Force in Alaska: Part I*, 16, 18.

⁵⁸ Cloe, *Air Force in Alaska: Part I*, 18

⁵⁹ Cloe, *Air Force in Alaska: Part I*, 18.

operations nor did they have the necessary equipment for cold weather operations.⁶⁰

On 5 March 1934, Alaskan Delegate Anthony J. Dimond testified before Congress, introducing the “Dimond Bill” highlighting the inability of the Air Service to aid in the recovery of Eielson’s body, the need for cold weather testing and training, and a requirement for equipping Alaska with defenses.⁶¹ Dimond’s argument was further strengthened by the Air Corps’ misfortune in delivering mail in 1934, which prompted the War Department to direct the Baker Board.⁶² Twelve pilots died and fifty-seven aircraft accidents occurred in a four-month period while delivering mail.⁶³ House Speaker Henry Rainy stated, “If the Air Corps was not equal to carrying the mail...how would it carry bombs?”⁶⁴ The Baker Board “studied and reported on the adequacy and efficiency of the Air Corps in performing its mission in peace and war.”⁶⁵

Lieutenant Colonel Henry “Hap” Arnold renewed faith in the Air Corps and diverted attention away from the mail tragedy. On 19 July 1934, Colonel Arnold led “The Alaska Flight,” consisting of fourteen officers and sixteen enlisted men in ten Martin B-10 bombers.⁶⁶ The flight was a round-trip from Bolling Field, Washington D.C. to Fairbanks, Alaska. The mission included surveying and photographing Alaska for future military defenses.⁶⁷ Alastair McBain asserted that Colonel Arnold “made the flight to prove, it was said, that the maligned Billy Mitchell

⁶⁰ Cloe, *Air Force in Alaska: Part I*, 18, 41.

⁶¹ Cloe, *Air Force in Alaska: Part I*, 41-42.

⁶² Cloe, *Air Force in Alaska: Part I*, 41. Baker Board: Investigate Air Corps war and peacetime mission.

⁶³ Cloe, *Air Force in Alaska: Part I*, 42; “Army Air Corps Record in Flying the Mail,” MICFILM 43796, IRIS #01102971, Foulois L/C Box 14, in the Murray Green Papers, AFHRA, Maxwell AFB AL.

⁶⁴ Cloe, *Air Force in Alaska: Part I*, 42.

⁶⁵ Cloe, *Air Force in Alaska: Part I*, 42.

⁶⁶ Cloe, *Air Force in Alaska: Part I*, 43.

⁶⁷ Cloe, *Air Force in Alaska: Part I*, 43.

knew what he was talking about when he said Alaska would be important in the defense of this hemisphere.”⁶⁸

The 950-mile return flight from Juneau to Seattle along the coastline “demonstrated that a tactical unit could be deployed to Alaska without having to fly over neutral territory” and the first time “Alaska had been linked with the continental United States by a mass non-stop flight of American airplanes.”⁶⁹ The Alaska Flight traveled 18,000 miles with only one recoverable mishap, at Cook Inlet in Alaska, returning on 20 August.⁷⁰ Upon his return, Colonel Arnold stated, “We have proved that it is possible to take tactical units of the Air Corps to Alaska quickly and bring them back successfully.”⁷¹ In his post-trip report, he recommended the creation of an Air Corps base in Alaska and that a “fair share of public funds” be provided to improve Alaskan air navigation.⁷² The combination of the harsh climate and inadequate navigation aids was dangerous for pilots.⁷³ Colonel Arnold received the Distinguished Flying Cross and his second Mackay Trophy, an award given for the “year’s most outstanding flight” the Alaskan Flight.⁷⁴ He personally

⁶⁸ Alastair McBain to Murray Green, letter “Reminiscences of Alaska-1934,” 25 May 1971. MICFILM 43796, IRIS #01102971, in the Murray Green Papers, AFHRA, Maxwell AFB AL.

⁶⁹ Cloe, *Air Force in Alaska: Part I*, 58, 60. Mileage provided in “General Arnold DFC Medal Citation,” 1936, MICFILM 43796, IRIS #01102971, in the Murray Green Papers, AFHRA, Maxwell AFB AL.

⁷⁰ “General Arnold DFC Medal Citation,” 1936. Mishap noted in letter from General Arnold to his wife. He did not think the plane was salvageable. “Alaskan Flight Start, MICFILM 43796, IRIS #01102971, in the Murray Green Papers, AFHRA, Maxwell AFB AL.

⁷¹ “Alaskan Flight: Excellent Press Coverage,” MICFILM 43796, IRIS #01102971, L/C Box 262, in the Murray Green Papers, AFHRA, Maxwell AFB AL.

⁷² “Alaskan Flight: Arnold’s Report,” MICFILM 43796, IRIS #01102971, “L/C Box 262, in the Murray Green Papers, AFHRA, Maxwell AFB AL.

⁷³ “Alaskan Flight: Arnold’s Report,” MICFILM 43796.

⁷⁴ “Mackay Trophy,” Air Corps Newsletter, Vol 18, No. 4, 15 March 1935, MICFILM 43796, IRIS #01102971, in the Murray Green Papers, AFHRA, Maxwell AFB AL.

Archives of General Arnold’s personal correspondence reveal that he advocated for DFCs for his entire crew, but disapproved. He received the only DFC for the Alaska Flight awarded in 1937.

briefed his findings from the trip and emphasized Alaska's strategic importance to President Roosevelt.⁷⁵

The Air Corps Tactical School (ACTS) also investigated the strategic importance of Alaska and provided the classified study *Strategic Possibilities of Alaska: 1934-1935*. Captain Arthur W. Vanaman, Captain Muir S. Fairchild, Lieutenant Hoyt S. Vandenberg, and Lieutenant Laurence S. Kuter were the Air Corps committee members who prepared the report. The committee concluded that Alaska was "vital to the continued existence of the United States as a first-class power that air bases be established in Alaska with absolutely no delay."⁷⁶

Three main considerations shaped the survey recommendations. First, air base establishment in Alaska would protect the US and deny adversaries the ability to expand their air bases into the remote US territory.⁷⁷ Second, the ACTS committee believed air power was critical and the most effective method to defend the Alaskan Territory and the US.⁷⁸ Air power would overcome the need for excessive ground troop requirements.⁷⁹ Finally, air power would be necessary because "naval power [would] fail in the event of an Atlantic threat."⁸⁰ ACTS concluded maintaining US sovereignty of Alaska was important to protect against "hostile seizure" and that the strategic Alaskan territory could serve US homeland defense interests.⁸¹

Diplomacy and military power were two methods considered to maintain the economic status quo.⁸² The ACTS committee reasoned that diplomacy was not a viable option, because of the reduction in the US presence in the Philippines and Guam and Japan's withdrawal from the

⁷⁵ Cloe, *Air Force in Alaska: Part I*, 58, 62.

⁷⁶ Air Corps Tactical School, "Strategic Possibilities of Alaska: 1934-1935," staff study, April-June 1935, 28, Call # 248-501-17, IRIS #00163543, AFHRA, Maxwell AFB AL.

⁷⁷ Air Corps Tactical School, "Strategic Possibilities of Alaska," 21.

⁷⁸ Air Corps Tactical School, "Strategic Possibilities of Alaska," 24.

⁷⁹ Air Corps Tactical School, "Strategic Possibilities of Alaska," 24.

⁸⁰ Air Corps Tactical School, "Strategic Possibilities of Alaska," 24.

⁸¹ Air Corps Tactical School, "Strategic Possibilities of Alaska," 24.

⁸² Air Corps Tactical School, "Strategic Possibilities of Alaska," 25.

League of Nations.⁸³ ACTS stated that the solution to enforcing national policy would then be “achieved by elimination [of diplomacy] and [that] air power must be employed.”⁸⁴ To defend against potential Japanese aggression, ACTS considered the establishment of air bases at Guam and Fairbanks, Alaska.⁸⁵ However, Guam was not a workable option for either air or naval bases because of the “complacent agreement to leave Guam undefended.”⁸⁶ The ACTS report indicated that establishing air and naval bases in Guam would be a provocative move and result in a war with Japan.⁸⁷ Establishing an air base in Fairbanks, they believed, would not trigger Japanese aggression.⁸⁸ ACTS offered, “Various points in Alaska might be prepared to service this force under the guise of supplementing the restricted means of communication throughout that country.”⁸⁹

ACTS emphasized the strategic location of Alaska, especially the Aleutian Island of Attu in close proximity to Japan (see Figure 1).⁹⁰ “The radius of action of an air force based near Attu Island, includes the entire Island Empire of the dominant Asiatic power in the Pacific. Her cities, her industry, her transportation, her royal family, her political center, her military and naval headquarters, her major naval bases and, perhaps, the main portion of her navy, her army, and her air force are within that range.”⁹¹ Reinforcing Attu as an airbase would protect the US from a Japanese attack.⁹² On 17 January 1935, the introduction of the Wilcox Bill advocated for airfield construction in Alaska and five other strategic locations.⁹³

⁸³ Air Corps Tactical School, “Strategic Possibilities of Alaska,” 25.

⁸⁴ Air Corps Tactical School, “Strategic Possibilities of Alaska,” 26.

⁸⁵ Air Corps Tactical School, “Strategic Possibilities of Alaska,” 25-26.

⁸⁶ Air Corps Tactical School, “Strategic Possibilities of Alaska,” 26.

⁸⁷ Air Corps Tactical School, “Strategic Possibilities of Alaska,” 25.

⁸⁸ Air Corps Tactical School, “Strategic Possibilities of Alaska,” 26.

⁸⁹ Air Corps Tactical School, “Strategic Possibilities of Alaska,” 26.

⁹⁰ Air Corps Tactical School, “Strategic Possibilities of Alaska,” map-3 and 22.

⁹¹ Air Corps Tactical School, *Strategic Possibilities of Alaska*, 22.

⁹² Air Corps Tactical School, *Strategic Possibilities of Alaska*, 22.

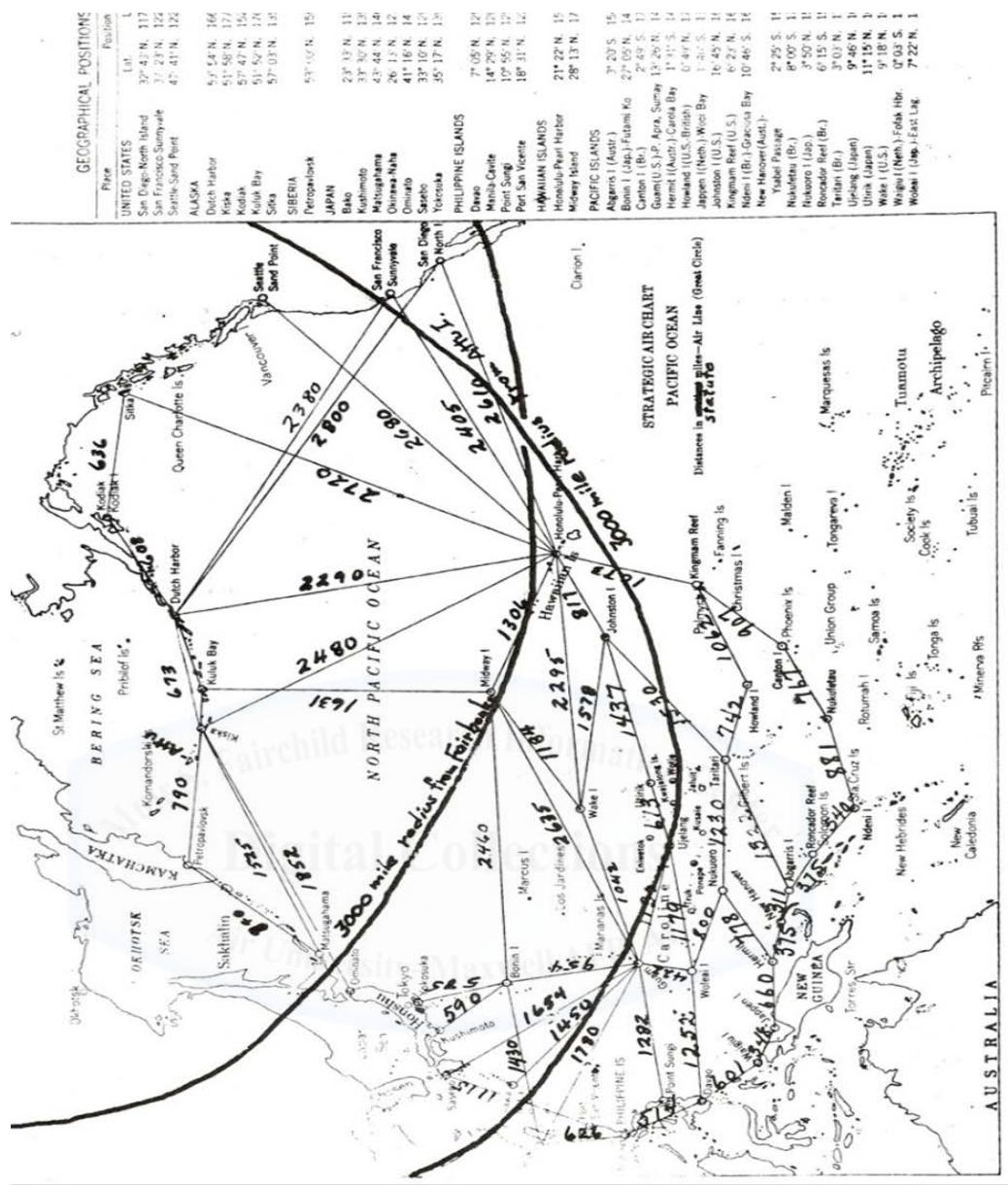


Figure 1: Strategic Air Chart

Source: ACTS: Strategic Possibilities of Alaska, 1934-1935

⁹³ Cloe, *Air Force in Alaska: Part I*, 62.

In support of the Wilcox Bill, General Mitchell made his now famous testimony in support of Alaska on 11 February 1935. He stated, "Alaska is the most central place in the world for aircraft and that is true of Europe, Asia or North America. I believe, in the future, he who holds Alaska will hold the world, and I think it is the most strategic place in the world."⁹⁴ According to John Cloe, military historian of Alaska, this was one of the last public appearances of General Mitchell prior to his passing on 19 February 1936.⁹⁵ The Wilcox committee took into account the Dimond Bill, Colonel Arnold's report, and the Baker Board findings.⁹⁶

On 12 August 1935, the Wilcox National Air Defense Act became law. Despite not providing funding for construction, this became the "most important piece of legislation [...] almost all base construction from 1935 through World War II was done under the umbrella of the Wilcox Act."⁹⁷ As part of the act's funding for the development of Arctic bases, Congress finally funded a cold weather testing facility near Fairbanks in 1939.⁹⁸

US international concerns and growing instability reinforced Alaska's strategic importance. On 1 September 1939, World War II began when Germany invaded Poland. "Japan's expansionist goals" were also becoming increasingly alarming.⁹⁹ Then on 17 June 1940, France surrendered to Germany. As a result, military presence and construction of airfields and bases throughout Alaska rapidly increased.¹⁰⁰ By February 1941, B-18s and P-36s began arriving at Elmendorf Air Force Base.¹⁰¹

⁹⁴ Quoted in Cloe, *The Air Force in Alaska: Part I*, 64.

⁹⁵ Cloe, *Air Force in Alaska: Part I*, 64.

⁹⁶ Cloe, *Air Force in Alaska: Part I*, 62

⁹⁷ Quoted in Cloe, *Air Force in Alaska: Part I*, 66.

⁹⁸ Cloe, *Air Force in Alaska: Part I*, viii.

⁹⁹ Cloe, *Top Cover for America*, 22.

¹⁰⁰ Cloe, *Top Cover for America*, 22.

¹⁰¹ John Haile Cloe, *The Air Force in Alaska, Part II, Buildup to Dutch Harbor: June 1940-June 1942* (Elmendorf AFB, AK: Office of History, Alaskan Air Command, 1986), 65.

President Roosevelt sought to improve US-USSR relations and support the Allied war effort. In January 1941, President Roosevelt reversed the 1939 embargo, which removed restrictions on aviation related supplies and deliveries to the USSR.¹⁰² This embargo was based on the Export Control Act of 1940 created in response to Japanese aggression.¹⁰³ He made this decision, despite the non-aggression pact between Germany and the USSR.¹⁰⁴ “Continued isolation of the USSR seemed increasingly less desirable, and tentative steps were taken to improve relations.”¹⁰⁵ To support the Allies, Roosevelt approved the US Lend-Lease Act on 11 March 1941.¹⁰⁶

The Soviets complicated matters for the US by entering into a neutrality treaty with Japan on 13 April 1941.¹⁰⁷ Japan’s proximity to undefended Alaska threatened US interests. However, one-and-one-half months later the German-Soviet pact dissolved on 22 June 1941, when Germany launched Operation Barbarossa and attacked the Soviet Union.¹⁰⁸

Alaskan defenses received another boost after 7 December 1941, when Japan attacked Pearl Harbor in Oahu, Hawaii.¹⁰⁹ General Arnold agreed to send two more squadrons and provide new P-40s and B-26s.¹¹⁰ However, by the end of January 1942, just 13 of 24 P-40s and 7 of 13 B-26s completed the journey to Alaska.¹¹¹ Outdated navigation aids and harsh weather conditions made flying the aircraft from the US mainland

¹⁰² Fern Chandonnet, ed., *Alaska at War, 1941-1945: The Forgotten War Remembered, Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993* (Anchorage, AK: Alaska at War Committee, 1995), 312-313.

¹⁰³ “World War II, Jul 5, 1940: United States Passes Export Control Act,” *History.com*, <http://www.history.com>this-day-in-history/united-states-passes-export-control-act> (accessed 24 May 2012).

¹⁰⁴ Chandonnet, *Alaska at War*, 311.

¹⁰⁵ Chandonnet, *Alaska at War*, 312.

¹⁰⁶ Chandonnet, *Alaska at War*, 312.

¹⁰⁷ Chandonnet, *Alaska at War*, 313.

¹⁰⁸ Chandonnet, *Alaska at War*, 313.

¹⁰⁹ Cloe, *Top Cover for America*, 47.

¹¹⁰ Cloe, *Top Cover for America*, 47.

¹¹¹ Cloe, *Top Cover for America*, 47-48. Six planes did not complete the journey and five planes crashed.

to Alaska difficult and dangerous.¹¹² Colonel William O. “Bruce” Butler, the Fourth Air Force Chief of Staff, devised a successful plan to ship planes by boat from Spokane to Alaska, instead of subjecting pilots to the treacherous air route in the winter.¹¹³

The Alaska Communication System (formerly called the Washington-Alaska Military Cable and Telegraph System) proved inadequate for wartime.¹¹⁴ “Alaska’s early warning air defense depended on the visual observation made by ground observers, the majority of whom were Indian agents located in remote villages.”¹¹⁵ Funding enabled an upgrade to the current system, providing a tactical network by activating existing sea cables permitting secure communications.¹¹⁶ Additional air support services were finally provided.¹¹⁷

The surge in Alaskan forces and increased infrastructure justified a flag rank presence in Alaska.¹¹⁸ As such, Colonel Butler transferred to Anchorage, Alaska and pinned on Brigadier General after assuming command of Eleventh Air Force on 8 March 1942.¹¹⁹ He contended with a lack of pilots and an aircraft shortfall.¹²⁰ Rear Admiral Robert A. Theobald assumed command of Task Force 8, which Admiral Chester Nimitz, Commander in Chief, Pacific Fleet directed to prepare for the Japanese threat projected in the Aleutians.¹²¹ He had operational control over Eleventh Air Force.¹²² By 21 May 1942, the US became aware of the “objectives of Midway, the approximate strength of the Japanese Northern Area Force and that it [would] strike on 1 June or

¹¹² Cloe, *Top Cover for America*, 47.

¹¹³ Cloe, *Top Cover for America*, 48.

¹¹⁴ Cloe, *Top Cover for America*, 40.

¹¹⁵ Cloe, *Top Cover for America*, 40.

¹¹⁶ Cloe, *Top Cover for America*, 40.

¹¹⁷ Cloe, *Top Cover for America*, 40.

¹¹⁸ Cloe, *Top Cover for America*, 51.

¹¹⁹ Cloe, *Top Cover for America*, 51.

¹²⁰ Cloe, *Top Cover for America*, 52.

¹²¹ Cloe, *Top Cover for America*, 58.

¹²² Cloe, *Top Cover for America*, 58.

shortly after.”¹²³ Admiral Nimitz ordered Theobald “not to risk his forces unless he was certain of victory.”¹²⁴ Theobald, Butler, and General Simon Bolivar Buckner, the Alaskan Defense Command chief, met on 27 May 1942 to plan the Aleutian defense.¹²⁵

The Japanese attacked Dutch Harbor, Alaska on 3 June, followed by their attack at Midway on 4 June 1942.¹²⁶ There are two reasons for the Japanese strategy. First, the Japanese objective at Dutch Harbor was directing US attention away from the planned main event, the attack at Midway Atoll.¹²⁷ The Japanese assumed the US would divert their forces away from Midway to protect US territory.¹²⁸ Secondly, the aftermath of the Doolittle Raid on Tokyo on 18 August 1942 left some Japanese convinced the attack was launched from a “secret base in the western Aleutian Islands,” not the USS *Hornet*.¹²⁹ Japanese assumptions proved out to be wrong on both counts.

Radar alerted the US in the Aleutians of an impending Japanese attack.¹³⁰ Despite the fact that the Imperial Japanese Navy lost the Battle of Midway, the Japanese Special Navy Landing Force occupied the Aleutian Islands of Kiska on 6 June and Attu on 7 June.¹³¹ This event marked the first time since the War of 1812 that foreign invaders had occupied US North American territory.¹³² According to Chandonnet, “Because of the Aleutian operation, the Japanese at the crucial Battle of Midway did not have the superiority in air carriers they might have

¹²³ Kevin Don Hutchinson, *World War II in the North Pacific: Chronology and Factbook*, (Greenwood Press, CT, 1994), 20.

¹²⁴ Cloe, *Top Cover for America*, 58

¹²⁵ Cloe, *Top Cover for America*, 58.

¹²⁶ Cloe, *Top Cover for America*, 63, 66, 68; Rottman, *World War II Pacific Island Guide: A Geo-Military Study* (Westport, CT: Greenwood Press, 2002), 457.

¹²⁷ Rottman, *World War II Pacific Island Guide*, 457.

¹²⁸ Rottman, *World War II Pacific Island Guide*, 457.

¹²⁹ Rottman, *World War II Pacific Island Guide*, 457.

¹³⁰ Cloe, *Top Cover for America*, 63.

¹³¹ Rottman, *World War II Pacific Island Guide*, 24, 457, 458; Cloe, *Top Cover for America*, 68 reports the Kiska occupation as 6 June. Rottman reports Kiska as 7 June.

¹³² Cloe, *Top Cover for America*, 75.

had.”¹³³ Additionally, “If [Admiral] Yamamoto’s plan had succeeded, Japan would have gained undisputed control of the central and western Pacific.”¹³⁴

Major Neil Rice prepared a memorandum regarding the situation in the Aleutians dated 11 June 1942.¹³⁵ The Office of the Chief of Staff at the War Department forwarded Rice’s memorandum to Lieutenant General Arnold. Major Rice stated that the occupation of the islands gave the Japanese control of the western Bering Sea, and insisted the US must maintain Umnak and Dutch Harbor.¹³⁶ He noted the potential loss of these two islands would provide the Japanese unfettered access to the entire Bering Sea.¹³⁷ Major Rice recommended Alaska be a separate theater with a designated Commanding General.¹³⁸ Additionally, he provided a survey of existing airfields and suggested that Army personnel maintain and construct additional Alaskan airfields.¹³⁹

As the conflict progressed in the Aleutians, the US military recovered a Mitsubishi Zero, the top fighter of the Imperial Japanese Navy Air Service, on the Aleutian island of Akutan.¹⁴⁰ The salvaged plane was sent to San Diego in July 1942.¹⁴¹ This was the “first complete Zero to fall into US hands.”¹⁴² The US repaired the plane and subsequently used it to train Allied pilots and improve flight tactics against the Japanese.¹⁴³

¹³³ Chandonnet, *Alaska at War*, x.

¹³⁴ Chandonnet, *Alaska at War*, x.

¹³⁵ Maj Neil W. Rice, A.A.F., to Lieutenant General H. H. Arnold, memorandum 11 June 1942, MICFILM # 28185, Frames 411-421, IRIS #02053309, in the Henry H. Arnold Papers, AFHRA, Maxwell AFB AL.

¹³⁶ Rice, Memorandum, Frame 412.

¹³⁷ Rice, Memorandum, Frame 412.

¹³⁸ Rice, Memorandum, Frame 415.

¹³⁹ Rice, Memorandum, Frame 416.

¹⁴⁰ Cloe, *Top Cover for America*, 67.

¹⁴¹ Cloe, *Top Cover for America*, 67.

¹⁴² Cloe, *Top Cover for America*, 67.

¹⁴³ Cloe, *Top Cover for America*, 67.

Progress in the Aleutian Islands and Alaska was overshadowed by higher priority theater requirements.¹⁴⁴ By July 1942, General Arnold did not want to send more air assets to Alaska as it “would be a wasteful diversion from other theaters of which are air theaters.”¹⁴⁵ However, supporting the Russians through the Lend Lease program gained momentum in American strategy, which provided Alaska another important wartime mission.

The Alaska-Siberia (ALSIB) route proposed by the US on 23 April 1942 concerned Stalin.¹⁴⁶ He stated, “I’m afraid our friends, the Japanese, won’t like the Alaska-Siberia route.”¹⁴⁷ Stalin preferred other Lend Lease route options. The Russians’ first preference was the cumbersome 13,000-mile South Atlantic route requiring shipping and flying the planes.¹⁴⁸ The second undesirable Russian preferred route went through the North Atlantic sea-lane to Arctic Russian ports.¹⁴⁹ President Roosevelt and Churchill voiced their concerns to Stalin regarding this passage.¹⁵⁰ Hitler’s forces reportedly destroyed 30-40% of the North-Russian convoys supporting Lend Lease, “in effect, shut[ting] down the route.”¹⁵¹ German submarines forcefully patrolled the routes suggested by the Russians.¹⁵² Despite these German threats, Stalin was not concerned for Allied safety stating, “No major task can be carried out in wartime without risk of loss.”¹⁵³

On 3 July 1942, Stalin approved the ALSIB air route to transfer planes from the US to Russia.¹⁵⁴ The Lend Lease planes moved along the Northwest Staging Route, beginning in Great Falls, Montana and ending

¹⁴⁴ Cloe, *Top Cover for America*, 86

¹⁴⁵ Cloe, *Top Cover for America*, 86-87.

¹⁴⁶ Chandonnet, *Alaska at War*, 314.

¹⁴⁷ Quoted in Chandonnet, *Alaska at War*, 314.

¹⁴⁸ Cloe, *Top Cover for America*, 149.

¹⁴⁹ Cloe, *Top Cover for America*, 149.

¹⁵⁰ Chandonnet, *Alaska at War*, 314.

¹⁵¹ Chandonnet, *Alaska at War*, 314.

¹⁵² Cloe, *Top Cover for America*, 149.

¹⁵³ Quoted in Chandonnet, *Alaska at War*, 314.

¹⁵⁴ Chandonnet, *Alaska at War*, 315.

in Fairbanks.¹⁵⁵ The Soviet pilots trained and received the planes at Ladd Field in Fairbanks and then flew the planes to Krasnoyarsk, Russia. Figure 2 highlights the ALSIB route.¹⁵⁶ The military constructed the Alaska-Canada (ALCAN) highway, which enabled ground support of the pilots.¹⁵⁷ This vital logistical lifeline began in Dawson Creek, Canada and ended at Delta Junction, Alaska.¹⁵⁸ Contract commercial airliners returned the US pilots from Ladd Field to Great Falls, speeding up Lend Lease operations.¹⁵⁹

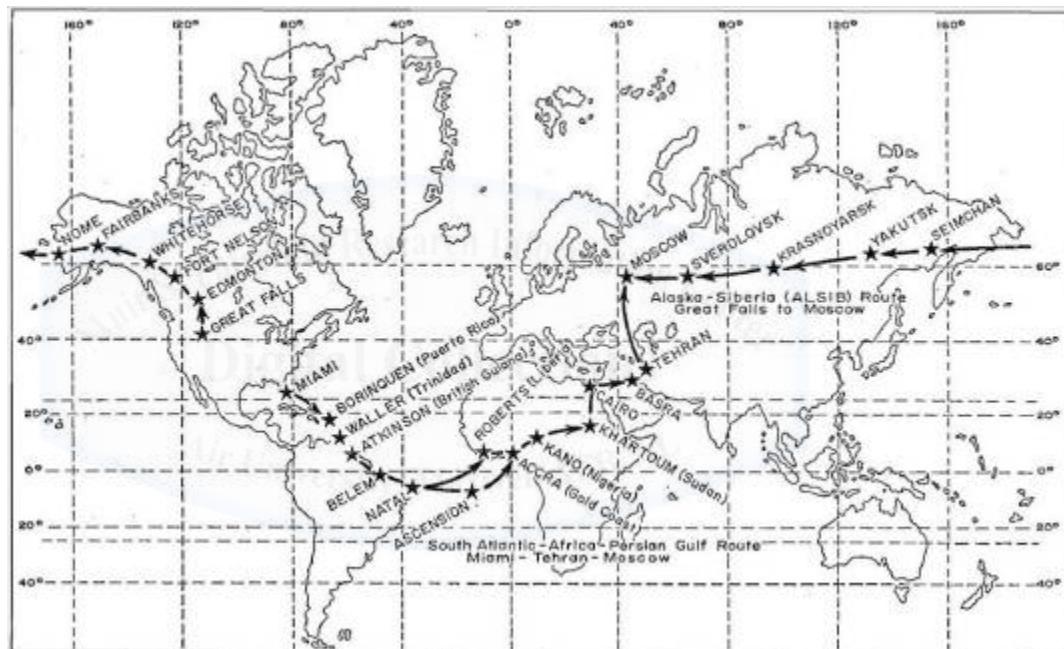


Figure 2: ALSIB – The Northern Air Route

Source: Bravo 369 Flight Foundation

¹⁵⁵ Chandonnet, *Alaska at War*, 320.

¹⁵⁶ "Lend-Lease History, ALSIB: Alaskan-Siberia, 1942-1945," Bravo 369 Flight Foundation, <http://www.bravo369.org/lend%20lease/lend.html> (accessed 20 February 2012). Image reprinted by permission from, Mr. Jeff Geer, President and Chairman of Bravo 369 Flight Foundation.

¹⁵⁷ Chandonnet, *Alaska at War*, 322.

¹⁵⁸ Chandonnet, *Alaska at War*, 322.

¹⁵⁹ Chandonnet, *Alaska at War*, 324.

From 11-29 May 1943, US forces successfully fought the Japanese at Attu and took back control of the island.¹⁶⁰ 15,000 US soldiers mobilized and attacked the 2,500 Japanese soldiers holding the island.¹⁶¹ General Landrum ordered air-dropped requests for the Japanese surrender on 28 May.¹⁶² There were 28 Japanese prisoners of war- the rest of the garrison was killed in action or committed suicide.¹⁶³ The battle resulted in 550 US casualties, 1,150 wounded, and 1,800 that suffered from non-battle related injuries.¹⁶⁴ While the battle at Attu progressed, the Japanese troops at Kiska began evacuating the island and returning to the Kurile Islands.¹⁶⁵

Once Attu was secured and an operational airfield in place, the US began launching air assaults on Paramushiro, Japan in the Kurile Islands on 10 July 1943.¹⁶⁶ The 77th Bomber Squadron sent 8 B-25s equipped with 32 500-pound general-purpose bombs.¹⁶⁷ The bombs successfully dropped but cloud cover obstructed targeting.¹⁶⁸ This was the “first [air attack] from an American land base.”¹⁶⁹ These attacks continued, while the Japanese quietly vacated Kiska. On 28 July, approximately 5,183 Japanese completely cleared Kiska in 55 minutes.¹⁷⁰ Chandonnet stated it was a “brilliant escape under cover of fog.”¹⁷¹ However, the US continued airdropping bombs on Kiska, noting

¹⁶⁰ Cloe, *Top Cover for America*, 107.

¹⁶¹ Cloe, *Top Cover for America*, 111. Provided US troop numbers. The Japanese troops vary according to source. Cloe indicated there were 2,400 and 29 POWs. Rottman, *World War II Pacific Island Guide*, 459. Rottman indicated 2,500 troops and 28 POWs.

¹⁶² Cloe, *Top Cover for America*, 111.

¹⁶³ Rottman, *World War II Pacific Island Guide*, 459; Cloe, *Top Cover for America*, 111.

¹⁶⁴ Rottman, *World War II Pacific Island Guide*, 459.

¹⁶⁵ Rottman, *World War II Pacific Island Guide*, 459.

¹⁶⁶ Rottman, *World War II Pacific Island Guide*, 459.

¹⁶⁷ Cloe, *Top Cover for America*, 123.

¹⁶⁸ Cloe, *Top Cover for America*, 123.

¹⁶⁹ Rottman, *World War II Pacific Island Guide*, 459.

¹⁷⁰ Cloe, *Top Cover for America*, 117; Rottman, *World War II Pacific Island Guide*, 26 reports the evacuation occurred on 27 July.

¹⁷¹ Chandonnet, *Alaska at War*, x.

the island appeared deserted and falsely assumed the Japanese were in hiding.¹⁷²

On 15 August 1943, “nearly 35,000 US and Canadian troops made unopposed landings to reoccupy Kiska. They were astonished as they were relieved to find the Japanese gone.”¹⁷³ Unfortunately, there were still 31 casualties and 51 wounded, as a result of friendly fire and Japanese booby traps during the unchallenged attack.¹⁷⁴ With the departure of the Japanese troops, the US and Canadian troops had accomplished their mission.¹⁷⁵ Soon, “Assignments to the Aleutians were looked upon with dread as they often meant enduring foul weather, long periods of darkness, grinding boredom, food shortages, no one-year rotational policy, the feeling of uselessness, and worst of all, very few women.”¹⁷⁶ Troops continued aerial reconnaissance missions and occasional bombing of the Kurile Islands.¹⁷⁷ The Aleutian Campaign turned into a “Theater of Frustration.”¹⁷⁸

On September 11, 1943, Eleventh Air Force launched 7 B-24s and 12 B-25s from Attu to conduct a raid on the Kuriles.¹⁷⁹ The Japanese fighters encountered the US bombers.¹⁸⁰ This catastrophic air attack resulted in the loss of the majority of Eleventh Air Force bombers due to damage or destruction.¹⁸¹ However, the US crews claimed 13 air victories and 2 possible victories.¹⁸² Some bombers did not make it back to Attu and sought sanctuary in Petropavlovsk, Russia.¹⁸³

¹⁷² Cloe, *Top Cover for America*, 117.

¹⁷³ Chandonnet, *Alaska at War*, x.

¹⁷⁴ Rottman, *World War II Pacific Island Guide*, 460.

¹⁷⁵ Cloe, *Top Cover for America*, 121.

¹⁷⁶ Chandonnet, *Alaska at War*, x.

¹⁷⁷ Cloe, *Top Cover for America*, 121.

¹⁷⁸ Cloe, *Top Cover for America*, 128.

¹⁷⁹ Cloe, *Top Cover for America*, 125.

¹⁸⁰ Cloe, *Top Cover for America*, 125.

¹⁸¹ Cloe, *Top Cover for America*, 126.

¹⁸² Cloe, *Top Cover for America*, 126.

¹⁸³ Cloe, *Top Cover for America*, 126.

US pilots flying from the Aleutians to conduct missions in the Kuriles faced additional hardships, facing internment when forced to divert to Russia.¹⁸⁴ The Soviet-Japanese neutrality treaty remained in effect until 8 August 1945.¹⁸⁵ In the meantime, the Russians made a secret agreement with the US to return their troops.¹⁸⁶ However, of the 80 US aircrews that landed in Russia some claimed they were “treated little better than prisoners of war.”¹⁸⁷ By December 1944, “seven B-24s, eleven B-25s, and nine Venturas were diverted to Russia. Nearly 200 American were interned and later released. The Russians kept the bombers.”¹⁸⁸ Nevertheless, the US continued to support the Russians through Lend Lease operations based in Alaska.

The Russians received approximately 7,926 airplanes on the Alaskan-Siberian Route (see Table 1).¹⁸⁹ Heavy bombers were not provided, because the Russians did not want to provoke the Japanese.¹⁹⁰ Because of Lend Lease, “the Soviet Air Force was able to quickly expand its obsolete bomber force and transform it into a credible offensive asset against the Luftwaffe.”¹⁹¹ General Arnold stated US troops “worked overtime to get the airplanes in first-class condition so that all the Russians had to do was fly them from Fairbanks to Russia. They never gave us any thanks; they never showed in any way that they were grateful for what we had done to make their stay in Fairbanks happy and

¹⁸⁴ Cloe, *Top Cover for America*, 126.

¹⁸⁵ Cloe, *Top Cover for America*, 140.

¹⁸⁶ Cloe, *Top Cover for America*, 134.

¹⁸⁷ Cloe, *Top Cover for America*, 134.

¹⁸⁸ Cloe, *Top Cover for America*, 134.

¹⁸⁹ “Lend-Lease History, ALSIB: Alaskan-Siberia, 1942-1945,” Bravo 369 Flight Foundation; Cloe, *Top Cover for America*, 154. Data use granted from, Mr. Jeff Geer, President and Chairman of Bravo 369 Flight Foundation and by John Cloe.

¹⁹⁰ Chandonnet, *Alaska at War*, 324; “Lend-Lease History, ALSIB,” Bravo 369 Flight Foundation.

¹⁹¹ Chandonnet, *Alaska at War*, 317.

pleasant, or regretted the inconvenience to our people.”¹⁹² Post-war, the Soviets dismissed these US contributions.¹⁹³

Table 1: Lend-Lease Aircraft Deliveries: ALSIB Route 1942-1945

Type of Aircraft	# Delivered
Bell P-39 Airacobra	2,618
Douglas C-47 Skytrain	710
Bell P-63 Kingcobra	2397
North American AT-6 Texan	54
Douglas A-20 Boston / Havoc	1,363
Curtiss P-40 Warhawk	48
North American B-25 Mitchell	732
Republic P-47 Thunderbolt	3
Curtiss C-46 Commando	1

Source: *Bravo 369 Flight Foundation and Top Cover for America*

Germany surrendered on 7 May 1945 and the Japanese followed on 2 September. “Alaska contributed to the Allied victory, not only against Japan in the Pacific, but also against Germany in Europe.”¹⁹⁴ The great global conflict concluded, but almost immediately, US and Soviet tensions increased. Some analysts speculated the Soviets hoarded Lend Lease aircraft and supplies for later use and during the war had used the ALSIB route for spying.¹⁹⁵ The Korean War confirmed some of these suspicions, when US troops seized former American Lend Lease equipment, supplied by the Russians and Chinese from surplus war stock.¹⁹⁶ The “wartime marriage of the capitalist and communist countries was ending” while a Cold War began.¹⁹⁷

¹⁹² Quoted in Cloe, *Top Cover for America*, 153.

¹⁹³ Chandonnet, *Alaska at War*, 339.

¹⁹⁴ Chandonnet, *Alaska at War*, 319.

¹⁹⁵ Chandonnet, *Alaska at War*, 337.

¹⁹⁶ Chandonnet, *Alaska at War*, 337.

¹⁹⁷ Cloe, *Top Cover for America*, 154.

Chapter 2

Alaska and the Cold War: 1945-1990

As airpower develops, Alaska will develop as the air cross-roads of the Pacific. Brigadier William L. "Billy" Mitchell

With the conclusion of World War II in 1945, the growing hostilities between the US and the Soviet Union developed into a Cold War. The divisions of the bipolar world, between the liberal capitalist US and the communist Soviet Union, fueled the Cold War for over four decades. Premier Joseph Stalin in February 1946 stated, “there could be no collaboration between communist countries and ‘the dying, corrupt’ capitalist democracies.”¹ Views on the stability of this period vary. Some argued the “near equal distribution of nuclear military power between the USSR and the United States created a bipolar world in which the two superpowers successfully managed stability in order to survive.”² Others contended the competition between the two superpowers resulted in instability, leading to “arms races and proxy wars in order to keep one or the other from gaining hegemony.”³ Regardless of these arguments, Alaska had a major role in protecting the US from Soviet aggression and would continue to play a key geostrategic role throughout the Cold War.

According to Lieutenant General Atkinson, CINCAL, 1953-1956, “since there was no more Japanese Empire -- they had been defeated -- it was obvious that the main threat at that time to us was the Soviet

¹ Herman S. Wolk, “Making the H-Bomb,” Air Force Magazine.com 92, no. 3 (March 2009), <http://www.airforcemagazine.com/MagazineArchive/Pages/2009/March%202009/0309H-Bomb.aspx> (accessed 25 March 2012).

² Harry Yarger, *Strategy and the National Security Professional: Strategic Thinking and Strategy Formulation in the 21st Century*. (Westport, CT: Praeger, 2008,) 60.

³ Yarger, *Strategy and the National Security*, 60.

Union.”⁴ Because of Alaska’s geostrategic location, it again contributed significantly to securing national security objectives during the Cold War. A polar projection map (Figure 3), as opposed to the more commonly used Mercator projection map, signifies Alaska’s strategic location in proximity to Russia.⁵ At the closest point, just over two miles separate Little Diomede Island, Alaska from Big Diomede Island, USSR.



Figure 3: Arctic Region, Polar Projection Map

Source: *University of Texas Libraries*

⁴ USAF Oral History Interview, “Alaskan Command Oral History: 1947-1969,” 19 June 1974, Tab G, 2, Call # K-239.0512-808, IRIS # 1000803, AFHRA, Maxwell AFB AL.

⁵ “Maps of Polar Regions and Oceans: Arctic Region,” Courtesy of the University of Texas Libraries, The University of Texas at Austin, <http://www.lib.utexas.edu/maps/> (accessed 27 March 2012).

Lieutenant General Breitweiser, CINCAL, 1967-1969, asserted that Mercator projection maps “distort the public mind on distances between key points on the globe.”⁶ From an Airman’s perspective, a Mercator map provides accurate distance but does not accurately portray the size of the North and South Poles and detracts from the strategic location of Alaska. “Cold Warriors” also favored the polar projection map because it accentuated the size of the USSR, portraying it as a looming giant threatening the US.

In 1947, the Joint Chiefs gave control of Alaska to the newly independent Air Force, because “Alaska is a battleground for Airmen.”⁷ A new post-World War II defensive strategy, which focused on deterring the Soviet Union, resulted in a force restructure in Alaska. Most notably, the Aleutians lost significance and the sector was disestablished in 1946.⁸ Interviews of former Alaskan Commanders-in-Chief from 1947 to 1969 provide some insight into the change in strategy.

In the article “Alaska: Airman’s Theater” in 1950, it was stated the appearance of the Aleutians as “stepping stones from Asia up to the North American continent’s front door, lands to be defended one by one” was deceiving.⁹ “No map could hint the subzero temperatures that could cripple an army, taunt it with frostbite, hold it to a mile-a-day advance through roadless mountains and plains.”¹⁰ Air officers commented the Aleutians were “islands of tundra” where an adversary such as Russia could be isolated and bombed “with no place to march to” if they chose to

⁶ USAF Oral History Interview, “Alaskan Command Oral History,” Tab K, 11.

⁷ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, “Alaska: Airman’s Theater,” *Time Magazine*, (6 Nov 50), 2.

⁸ John Haile Cloe with Michael F. Monaghan, *Top Cover for America: The Air Force in Alaska, 1920-1983* (Missoula, MT: Anchorage Chapter-Air Force Association and Pictorial Publishing Company, 1984), 158. Two sectors: Aleutian and Yukon (mainland Alaska)

⁹ USAF Oral History Interviews, Tab F, “Alaska: Airman’s Theater,” 2.

¹⁰ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, “Alaska: Airman’s Theater,” 2.

invade.¹¹ Additionally, these officers did not support the dispersion of aircraft in the formidable Aleutians and wanted them based in the “heartland” of Alaska at Elmendorf Air Force Base, Ladd Field, and Eielson.¹² However, concentration of the aircraft at these three bases provided adversaries a concentrated target set, one easier to plan against.¹³

Lieutenant General Kepner, CINCAL 1950-1953, a deterrence advocate, believed the build-up of the Alaskan military infrastructure would deter adversaries, thus preventing future battles.¹⁴ He compared the cost of B-36 bombers that “never dropped a bomb on the enemy” to the costs of investing in Alaskan bases.¹⁵ “Their very existence prevents the enemy from deciding to attack at times.”¹⁶ General Twining, CINCAL, 47-50, stated in 1950 that “Alaska is a one-shot deal [...] we have to be prepared to meet a surprise attack the first time or not at all. We don’t have a second chance.”¹⁷ General Twining reiterated the need for continued planning to counter “our enemies to the west” 23 years later in 1973.¹⁸

¹¹ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, “Alaska: Airman’s Theater,” 2-3.

¹² USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, “Alaska’s Airman’s Theater,” 3.

¹³ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, “Alaska’s Airman’s Theater,” 3.

¹⁴ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, 8.

¹⁵ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, 8.

¹⁶ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, 8.

¹⁷ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab F, “Alaska: Airman’s Theater,” 3. General Nathan Twining quote.

¹⁸ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab E, letter to Lt Gen James C. Sherrill.

Air Defense

Alaska became the “eyes for the nation in order to warn the rest of the country if an attack was coming.”¹⁹ The establishment of Alaskan Command in 1947 included the missions of defending Alaska and “protect[ing] the North American continent from attacks across the polar regions.”²⁰ Air defense enhancements and force restructuring were necessary. “A new *Heartland* concept of air defense dominated war planning and eventually redefined the physical locations for units assigned to Alaskan Air Command” (AAC).²¹ This Heartland contained the bases in Anchorage and Fairbanks.²² “Under the armed forces’ new strategy for defending Alaska, the U.S. was coiling its strength -- its winterized jet fighters, its cadres of weather-wise pilots and its supporting Army troops -- into one tight defense set in the Alaskan heart.”²³ Planners at AAC, the Army-Navy Hoge Board, and HQ Air Force conducted separate studies and concluded radar sites for air defense were necessary in Alaska.²⁴ As a result, Congress approved the initial construction of ten radar sites and two control centers.²⁵

On 27 June 1950, an provisional air defense system became operational improving coverage and lessening fears of a Soviet invasion.²⁶ The 10th Air Division at Elmendorf Air Force Base and the 11th Air

¹⁹ Paul Ongtooguk, “Alaska’s Cultures: Military in Alaska,” Alaska History and Cultural Studies, <http://www.akhistoycourse.org/articles/article.php?artID=446> (accessed 21 March 2012).

²⁰ “Military History in Alaska, 1867 - 2000,” Joint Base Elmendorf-Richardson, <http://www.jber.af.mil/library/factsheets/factsheet.asp?id=5304> (accessed 25 March 2012).

²¹ TSgt William J. Allen, “Hunting the Soviet Bear – a study of Soviet Aircraft Intercepts near Alaska, 1961-2006,” 1. Provided by 673rd Air Base Wing History Office, Joint Base Elmendorf-Richardson, Alaska. 11th Air Force was redesignated Alaskan Air Command on 18 Dec 45.

²² Allen, “Hunting the Soviet Bear,” 1.

²³ USAF Oral History Interviews, Tab F, “Alaska: Airman’s Theater,” 1.

²⁴ Cloe, *Top Cover for America*, 160-161. Studies conducted between 1946 and 1947.

²⁵ Cloe, *Top Cover for America*, 161. Congress approved in 1949.

²⁶ Cloe, *Top Cover for America*, 167.

Division at Ladd Field had responsibility for the air defense system.²⁷ The two divisions oversaw the radar sites operated by the aircraft control and warning (AC&W) squadrons.²⁸ The AC&W system achieved full operational capability status in 1954.²⁹ Figure 4 highlights the division sectors, the AC&W sites, and the Alaskan portion of the Distant Early Warning (DEW) Line system.³⁰

The establishment of the DEW Line system in 1957 was in response to a 1951 Air Force sponsored study regarding Soviet nuclear-armed manned bombers.³¹ The report indicated the air defense network needed improvement to counter this potential threat.³² The consensus was that the polar region was vulnerable to Soviet exploitation. A 1952 Summer Study group, hosted at the Massachusetts Institute of Technology, recommended the DEW Line as a potential “critical component of defense against manned bombers attacking across the arctic circle, by providing early detection and warning to a central point in the United States.”³³

The group surmised the Air Force “needed three to six hours advanced warning of an attack so that (1) Strategic Air Command bombers could more easily be dispersed to numerous airfields or be airborne to survive an initial onslaught, (2) air defense interceptors could be deployed to maximize the defense, (3) civil aircraft could be better diverted from the more likely target areas, and (4) civil defense measures could be more effectively implemented.”³⁴

²⁷ Cloe, *Top Cover for America*, 187.

²⁸ Cloe, *Top Cover for America*, 187.

²⁹ Cloe, *Top Cover for America*, 170.

³⁰ Cloe, *Top Cover for America*, 177. Permission for graphic use provided by John Cloe.

³¹ F. Robert Naka and William W. Ward, “Distant Early Warning Line Radars: The Quest For Automatic Signal Detection,” *Lincoln Laboratory Journal* 12, no. 2 (2000): 181.

³² Naka, “Distant Early Warning Line Radars,” 181.

³³ Naka, “Distant Early Warning Line Radars,” 181.

³⁴ Naka, “Distant Early Warning Line Radars,” 181.

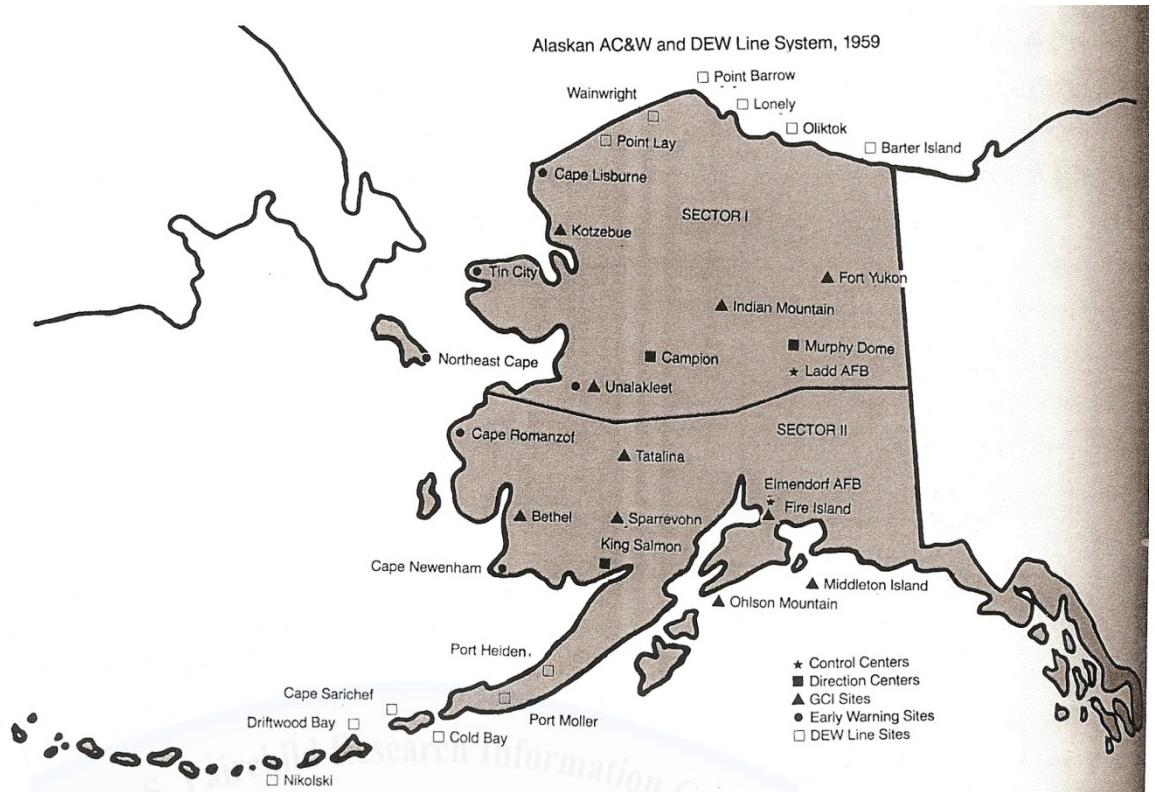


Figure 4: Alaskan AC&W and DEW Line System, 1959

Source: *John Haile Cloe, Top Cover for America*

The DEW Line system, codenamed Project 572, consisted of over 50 radar and communication stations spanning 3,000 miles.³⁵ The location of some of the sites had historical significance and illustrated both man's long presence in the region as well as the dangers of Arctic operations. “One site is within walking distance of the spot where Sir John Franklin perished in 1847 during his ill-fated expedition to find the Northwest Passage; another looks down on the remains of a ship abandoned by Roald Amundsen in the early 1900’s. And more recently, it was near Point Barrow that Wiley Post and Will Rogers died in an airplane crash in 1935.”³⁶

³⁵ Western Electric Company, *The Dew Line Story* [New York?]: Western Electric Company, 1958), 4, <http://www.porticus.org/bell/pdf/dewline.pdf> (accessed 25 March 2012).

³⁶ Western Electric Company, “The DEW Line Story,” 8.

When the DEW Line system detected an aircraft, it was “radioed by high-wave scatter broadcast to be picked up by receivers at Colorado Springs.”³⁷ The “radars reported the location, track direction, and time of bomber detection to NORAD.”³⁸ Aircraft from either Alaska or Canada were then dispatched to intercept the unidentified aircraft. The fighter interceptor squadrons assigned to the 10th and 11th Air Divisions patrolled and protected Alaskan airspace from the Soviet Union.³⁹ In 1950, fighters could be “scrambled” within three minutes of notification, “no easy feat in the heavy cold of Alaskan winter.”⁴⁰ From 1945 to 1955, AAC was “initially equipped with P-51s, which were replaced in succession by F-80s, F-94s, F-89s, and F-102s.”⁴¹ In 1970, the F-102s were exchanged for F-4Es.⁴²

The Soviet threat was real. Prior to the DEW Line system installation, US aircraft experienced one confirmed and one probable attack by Soviet MiG-15s in 1953 and 1955.⁴³ “By 1957, AAC had reached the peak of its air defense strength” with over 150 F-89s assigned to Alaska.”⁴⁴ The addition of the operational DEW Line system enhanced air defense capability. The DEW Line provided a “radar fix [...that] fasten[ed] the electronic brains of the [fighter] interceptors” enabling engagement of the unidentified aircraft.⁴⁵ The Alaskan radar “detected known Soviet bomber tracks as early as 1958, the first intercept wasn’t until 5 December 1961 when two Soviet TU-16 Badgers

³⁷ Richard Morenus, *DEW Line: Distant Early Warning Radar the Miracle of America’s First Line of Defense*, (Rand McNally and Company, 1957), 177.

³⁸ Naka, “Distant Early Warning Line Radars,” 183.

³⁹ Cloe, *Top Cover for America*, 187.

⁴⁰ USAF Oral History Interviews, Tab F, “Alaska: Airman’s Theater,” 4.

⁴¹ “Eleventh Air Force History,” Joint Base Elmendorf-Richardson, <http://www.jber.af.mil/library/factsheets/factsheet.asp?id=5421> (accessed 25 March 2012).

⁴² “Eleventh Air Force History,” Joint Base Elmendorf-Richardson.

⁴³ Cloe, *Top Cover for America*, 192.

⁴⁴ Cloe, *Top Cover for America*, 191.

⁴⁵ Morenus, *DEW Line*, 178.

were met over the Bering Sea by two [US] F-102s.”⁴⁶ Table 2 provides the total number of Soviet flights intercepted from 1961-1991.⁴⁷

Table 2: Intercepts by Year

<i>Year</i>	<i>Intercept</i>	<i>Year</i>	<i>Intercept</i>	<i>Year</i>	<i>Intercept</i>	<i>Year</i>	<i>Intercept</i>
1961	1	1970	0	1980	8	1990	29
1962	0	1971	0	1981	12	1991	15
1963	3	1972	1	1982	8		
1964	0	1973	2	1983	8		
1965	1	1974	8	1984	9		
1966	9	1975	5	1985	18		
1967	6	1976	12	1986	18		
1968	11	1977	8	1987	33		
1969	1	1978	8	1988	29		
		1979	18	1989	25		
						<i>Total</i>	<i>306</i>

Source: *TSgt William J. Allen, “Hunting the Soviet Bear”*

In 1957, the North American Air Defense Command (NORAD) was established and assumed control of air defense in Alaska.⁴⁸ Soon after, activation of the Alaskan NORAD Region (ANR) in 1958 increased the position of the unified Alaskan Command commander at Elmendorf AFB, making the position dual-hatted⁴⁹ and “responsible to CINCNORAD for air defense activities in Alaska.”⁵⁰ The ANR Command and Control Center at Elmendorf became the focal point for Alaskan air defense.⁵¹

Further enhancing communications throughout the state and linking Alaska’s air defense system was the White Alice Communication

⁴⁶ Allen, “Hunting the Soviet Bear,” 20.

⁴⁷ Allen, “Hunting the Soviet Bear,” 69.

⁴⁸ Cloe, *Top Cover for America*, 187; Strategic Air Defense, “NORAD at 40: Historical Overview,” <http://www.fas.org/nuke/guide/usa/airdef/norad-overview-htm> (accessed 25 March 2012).

⁴⁹ Cloe, *Top Cover for America*, 158, 187. Alaskan Command designated a unified command on 1 Jan 1947 consolidating authority over: Alaskan Air Command, Alaskan Sea Frontier, and US Army, Alaska.

⁵⁰ Alaskan Air Command Historical Division, “Alaskan Air Command Mission,” *Alaskan NORAD Region: Regional Historical Report, 1 January-30 June 1962, 1 October 1961*, 1, Call # K-484.011-1, IRIS # 01048845, AFHRA, Maxwell AFB AL.

⁵¹ Cloe, *Top Cover for America*, 187.

System in 1958.⁵² According to Lieutenant General Atkinson, prior to White Alice, the radar sites had the intelligence on incoming aircraft but lacked a continuous capability to notify Elmendorf headquarters.⁵³ Due to the inadequate telephone line system in Alaska, radio was the primary but unreliable means of communication.⁵⁴

“White Alice” system was an indispensable link in the Air Defense of the United States. It enabled combat centers to receive warnings from remote radar outpost[s]; it made possible effective coordination between various branches of the military establishment which guarded against the approach of hostile aircraft; it gave both the military and civilian organizations a chance to prepare for such an attack; and it provided reliable communications between Americans within Alaska and those within the continental United States.⁵⁵

This network tied in the DEW Line and the Ballistic Missile Early Warning Station (BMEWS) at Clear, Alaska. Figure 5 highlights the White Alice network distribution throughout Alaska.⁵⁶

During the late 1950s, “emphasis was switched from defending against not only a bomber attack but also an intercontinental ballistic missile, or ICBM, attack.”⁵⁷ The current air defense system was insufficient to counter the new ICBM threat.⁵⁸ Because of Soviet advancements in ICBMs, Clear, Alaska was one of three locations throughout the world selected for a BMEWS.⁵⁹ In 1961, the completed BMEWS in Alaska was connected to the NORAD Command Operations Center at Ent Air Force Base, Colorado and Strategic Air Command (SAC)

⁵² Cloe, *Top Cover for America*, 172.

⁵³ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab G, 7.

⁵⁴ USAF Oral History Interviews, “Alaskan Command Oral History,” Tab G, 7.

⁵⁵ TSgt Baker, “A Special Study of the Sale of the White Alice Communications System,” Office of Air Force History, 1931st Communications Wing, Elmendorf AFB, Alaska, 3. Call #K-WG-1931-SU-RE, IRIS # 01099470, AFHRA, Maxwell AFB AL.

⁵⁶ Cloe, *Top Cover for America*, 178. Permission for graphic use provided by John Cloe.

⁵⁷ Cloe, *Top Cover for America*, 207.

⁵⁸ History & Research Division, *History of Headquarters Strategic Air Command: 1960*, (SAC Historical Study No. 85), 31. Call # K416.01-85, IRIS #00502061, AFHRA, Maxwell AFB AL.

⁵⁹ Cloe, *Top Cover for America*, 207, 209. Two other sites: Thule, Greenland and Fylingdales Moor, England.

in Omaha, Nebraska.⁶⁰ The BMEWS “provide[d] at least 15 minutes reliable warning of a mass missile attack from the USSR against southern Canada, continental United States, and the United Kingdom.”⁶¹ SAC was the principal consumer of BMEWS data, which was critical to providing as much warning time of a Soviet attack as possible to US decision makers.⁶²

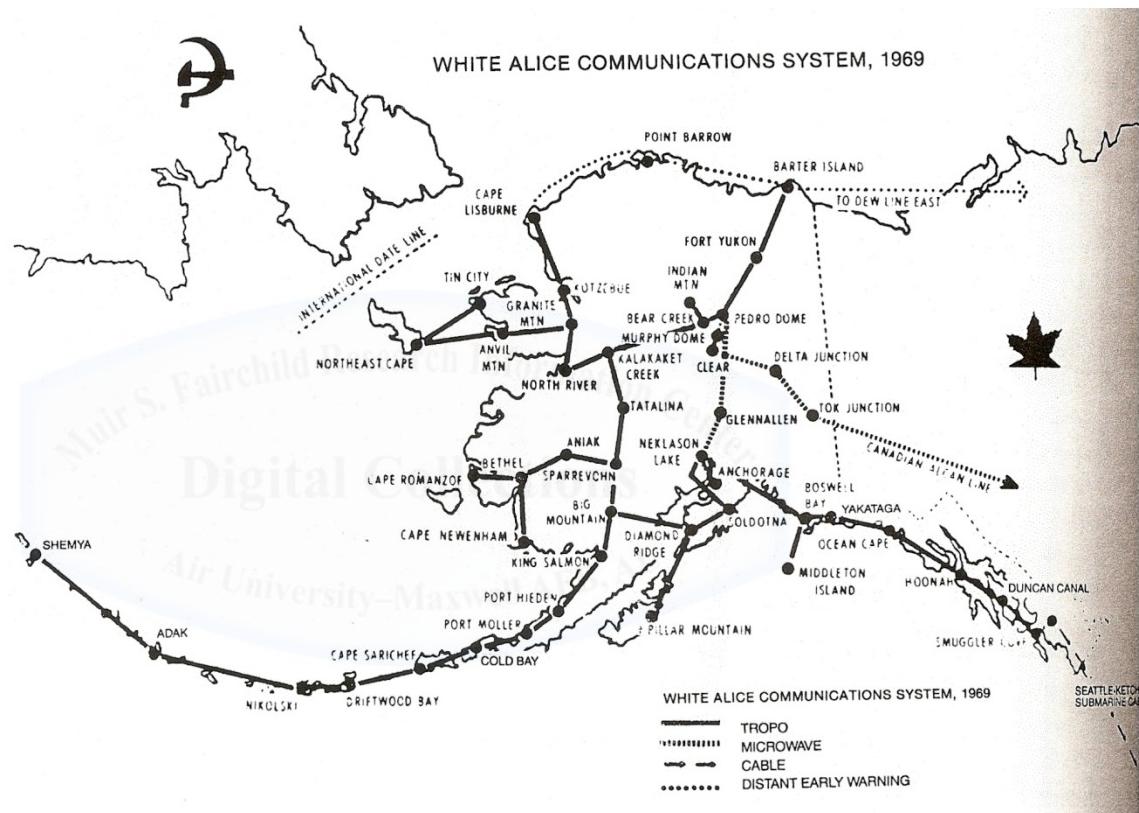


Figure 5: White Alice Communications System, 1969

Source: John Haile Cloe, *Top Cover for America*

⁶⁰ Cloe, *Top Cover for America*, 209; History & Research Division, *History of Headquarters Strategic Air Command: 1960*, (No. 85), 31-32.

⁶¹ History & Research Division, *History of Headquarters Strategic Air Command: 1960*, (No. 85), 31.

⁶² History & Research Division, *History of Headquarters Strategic Air Command: 1960*, (SAC Historical Study No. 83, Volume III), Memo titled “BMEWS Interim Display Facility,” 21 Jul 59. Call # K416.01-83, IRIS # 00502057, AFHRA, Maxwell AFB AL.

Strategic Air Command and Alaska

In response to US national policy that “prohibited a first strike philosophy,” SAC continued to “build the sinews of the preventative strike force.”⁶³ The logic at the time was that since “national policy precluded the nation’s taking the offensive, it was suggested the weight of evidence indicate[d] that a posture that can win a general war is by its very nature the kind of posture that can deter both it and lesser conflicts.”⁶⁴ As such, SAC aircraft forward deployed to Alaska, and other areas outside of the continental United States, under Operation Reflex Action.⁶⁵

Fifteenth Air Force, assigned to Strategic Air Command, placed tenant units at Eielson and Elmendorf Air Force Bases during the Cold War.⁶⁶ Strategic Air Command deployed bombers to Eielson Air Force Base on a rotational basis from 1947 to 1963.⁶⁷ Elmendorf Air Force Base hosted SAC bombers from 1960 to 1966.⁶⁸ “This ended an era in which Alaska had played an important role by maintaining the strategic retaliatory capabilities of the United States.”⁶⁹

Most notably, Alaskan Air Command increased support of the SAC Chrome Dome mission during the Cuban Missile Crisis, beginning on 20 October 1962.⁷⁰ Eielson Air Force Base ensured they could supply

⁶³ History & Research Division, *History of the Strategic Air Command, 1 January-30 June 1960*, (Historical Study No 82, Volume I), 161. Call # K416.01-82, IRIS # 01056930, AFHRA, Maxwell AFB AL.

⁶⁴ History & Research Division, *History of the Strategic Air Command, 1960*, (No 82), 161. The second part of the quote, after “suggested,” was quoted from “Strategy on Trial,” *Air Force and Space Digest*, (August 1960), 48.

⁶⁵ History & Research Division, *History of Headquarters Strategic Air Command: 1960*, (No. 85), 67.

⁶⁶ History & Research Division, *History of Headquarters Strategic Air Command: 1960*, (No. 85), 191.

⁶⁷ Cloe, *Top Cover for America*, 160.

⁶⁸ Cloe, *Top Cover for America*, 160.

⁶⁹ Cloe, *Top Cover for America*, 160.

⁷⁰ Alaskan Air Command Historical Division, “Alaskan Air Command Chronology of the Cuban Missile Crisis,” 20 October entry, *Alaskan NORAD Region, Regional Historical Report, 1 July-31 December 1962*, (Document 39), Call # K484.011-1, IRIS # 01048846, AFHRA, Maxwell AFB AL.

additional JP-4 and petroleum, oil, and lubricants for intensified Chrome Dome requirements and made daily reports to SAC from 22 October to 21 November.⁷¹ In response to the crisis, Alaskan NORAD region combat forces assumed the highest level of readiness.⁷² By 27 November, the Alaskan NORAD Region reverted to normal readiness levels.⁷³

In the years leading up to World War II and beyond, it was not just the military that saw the importance of Alaska as an air route to the rest of the world. As commercial aviation began to boom, the airline business looked North to Alaska, too.

Commercial Air in Alaska

Commercial air in Alaska grew from the early military and bush pilot flights highlighted in Chapter One. The 1929 establishment of Aviation Field, later renamed Merrill Field in 1930, resulted in Anchorage “becom[ing] the leader in air traffic operations and passengers carried within Alaska.”⁷⁴ Additionally, Charles Lindbergh and his co-pilot wife Anne Morrow Lindbergh, generated attention for Alaskan commercial air with their flight to the Orient in 1931 along the Great Circle Route. In Anne Morrow Lindbergh’s book, *North to the Orient*, she emphasized that the route to the Far East would show the “indisputable importance of future air-routes between America and Japan, China and Siberia.”⁷⁵ Their historic flight surveyed unchartered commercial air routes through Canada, Alaska, and the Soviet Union on their way to and from the

⁷¹ Alaskan Air Command Historical Division, “Alaskan Air Command Chronology of the Cuban Missile Crisis,” 20 October entry, Logistics; 22 October entry, Logistics; 21 November entry, Logistics.

⁷² Alaskan Air Command Historical Division, “Alaskan Air Command Chronology of the Cuban Missile Crisis,” 22 October entry.

⁷³ Alaskan Air Command Historical Division, “Alaskan Air Command Chronology of the Cuban Missile Crisis,” 27 November entry.

⁷⁴ “Merrill Field: Anchorage Aviation History,” Municipality of Anchorage, http://www.muni.org/Departments/merrill_field/Pages/History.aspx (accessed 1 April 2012). Merrill Field stopped supporting military air operations in 1941 when Elmendorf airfields became operational.

⁷⁵ Anne Morrow Lindbergh, *North to the Orient* (Rahway: Quinn & Boden Company, Inc, 1958), 19-20.

Orient.⁷⁶ From 1932 to 1938, commercial aircraft rapidly expanded in number from 31 to 155 air frames, resulting in the establishment of the Civil Aeronautics Authority in Alaska.⁷⁷

The expansion of commercial aviation into Alaska provided humanitarian and economic benefits. Alaska Airlines in the 1940s was the “largest charter operator in the world.”⁷⁸ Demonstrating its capability, Alaska Airlines delivered food during the Berlin Airlift and transported refugees resettling in Israel.⁷⁹ By 1946, Anchorage was advertised as the “shortcut between Europe and the Orient via the Arctic route mak[ing] the journey from New York to Tokyo two thousand miles shorter than the Central Pacific route through San Francisco.”⁸⁰ The marketing worked, and in 1947 Anchorage and Shemya became stops for Northwest Orient Airlines on their routes to the Far East.⁸¹ Lieutenant General Atkinson noted the increased “commercial activity” and reliance on Elmendorf Air Force Base during this time, since it was the only facility equipped to handle major commercial air operations.⁸²

Merrill Field, located in Anchorage, could not support large commercial operations because city encroachment prevented further airfield expansion.⁸³ In 1948, Congress authorized funds for the construction of “international type” airports in Anchorage and

⁷⁶ “Aviation History Timeline,” The Charles A. and Anne Morrow Lindbergh Foundation, <http://www.lindberghfoundation.org/docs/index.php/aviation-history-timeline> (accessed 30 March 2012).

⁷⁷ “Alaska’s Heritage: Air Transportation Chapter 4-12,” Alaska History and Cultural Studies, <http://www.akhistorycourse.org/articles/article.php?artID=177> (accessed 30 March 2012).

⁷⁸ “Alaska Airlines History by Decade,” Alaska Airlines, <http://www.alaskaair.com/content/about-us/history/overview.aspx> (accessed 1 April 2012).

⁷⁹ “Alaska Airlines History by Decade,” Alaska Airlines.

⁸⁰ Municipality of Anchorage, “Merrill Field: Anchorage Aviation History & Development.”

⁸¹ John L. Hoh Jr., “Tailing the Red Tail of Northwest Airlines (part 1),” Suite101.com, http://archive.suite101.com/article.cfm/airline_liveries/116318 (accessed 1 April 2012).

⁸² USAF Oral History Interviews, “Alaskan Command Oral History,” Tab G, 3.

⁸³ Municipality of Anchorage, “Merrill Field: Anchorage Aviation History.”

Fairbanks.⁸⁴ Continued federal and state investments ensured modernization of Alaskan airports and the capacity to support the demands of the jet age.⁸⁵ By the 1960s, “Anchorage established itself as the ‘Air Crossroads of the World’ [hosting] seven international carriers [that] used the [Anchorage International] Airport as a regular stop-over on routes between Europe, Asia, and the Eastern U.S.”⁸⁶ However, even with all the air defenses in Alaska, commercial airlines in the region were not immune to the threats of the Cold War.

Two Korean Air Line flights unintentionally violated Soviet air space on this northern route and were engaged by interceptors. On 20 April 1978, Flight 902 departed Paris, France en route to Anchorage and was fired on by an SU-15 when failing to respond to commands.⁸⁷ The plane was initially identified by Soviet air defenses as a reconnaissance Boeing RC-135, but was later confirmed to be a civilian airliner prior to engagement.⁸⁸ Two passengers died during the incident from “rapid decompression,” while the remaining 107 occupants survived.⁸⁹

On 1 September 1983, Flight 007 departed Anchorage en route to Seoul and unintentionally got off course twice.⁹⁰ The first time off course, six Soviet MIG-23s were sent to engage the aircraft, but the airliner had departed their designated air defense sector.⁹¹ Upon re-entering Soviet airspace, two SU-15s intercepted and fired missiles into

⁸⁴ “Ted Stevens Anchorage International Airport: History.” State of Alaska: Alaska Department of Transportation & Public Facilities. <http://dot.alaska.gov/anc/about/history.shtml> (accessed 1 April 2012).

⁸⁵ “Alaska’s Heritage: Air Transportation Chapter 4-12,” Alaska History and Cultural Studies, <http://www.akhistorycourse.org/articles/article.php?artID=177> (accessed 30 March 2012).

⁸⁶ “Ted Stevens Anchorage International Airport: History,” State of Alaska.

⁸⁷ “Criminal Occurrence Description: 20 April 1978,” Aviation Safety Network, <http://aviation-safety.net/database/record.php?id=19780420-1> (accessed 1 April 2012).

⁸⁸ “Criminal Occurrence Description: 20 April 1978,” Aviation Safety Network.

⁸⁹ “Criminal Occurrence Description: 20 Apr 1978,” Aviation Safety Network.

⁹⁰ “Criminal Occurrence Description: 01 Sep 1983,” Aviation Safety Network, <http://aviation-safety.net/database/record.php?id=19830901-0> (accessed 1 April 2012).

⁹¹ “Criminal Occurrence Description: 01 Sep 1983,” Aviation Safety Network.

the airliner, resulting in the loss of 269 passengers and crew.⁹² The Soviets assumed that the aircraft was a US RC-135 intelligence aircraft, since one was reported in the area of Kamchatka that same day.⁹³ This type of aircraft routinely flew missions off the Soviet coast.⁹⁴

Prior to takeoff the pilots inadvertently set the autopilot incorrectly and were unaware they were off course during routine flight communications with air traffic controllers.⁹⁵ The US RC-135 flight returned to Shemya without Russian knowledge and the Korean airliner was misidentified as the US plane.⁹⁶ The unfortunate incident was a mistake and the victims were senseless casualties of the Cold War.⁹⁷

Despite the instability of the Cold War, “Alaska had become one of the ‘flyingest’ places in the world [...] nearly as many airplanes were registered to private owners as were automobiles” in the 1980s.⁹⁸ However, improved jets with extended range in the 1990s reduced the number of international passengers stopping in Alaska.⁹⁹ Fortunately, the cargo and domestic air market thrived.¹⁰⁰ “After the Cold War ended, commercial aviation through the Arctic became the reality as Russian government opened the air space over Siberia for international aviation.”¹⁰¹

During the Cold War, US investments in Alaska ensured North America was safe from Soviet air and ICBM threats. The military units and forces assigned to Alaska adapted to the constant Soviet threat.

⁹² “Criminal Occurrence Description: 01 Sep 1983,” Aviation Safety Network.

⁹³ “Criminal Occurrence Description: 01 Sep 1983,” Aviation Safety Network.

⁹⁴ “Criminal Occurrence Description: 01 Sep 1983,” Aviation Safety Network.

⁹⁵ David E. Hoffman, *The Dead Hand: the Untold Story of the Cold War Arms Race and Its Dangerous Legacy*, 1st Anchor Books ed. (New York: Anchor, 2010), 74.

⁹⁶ Hoffman, *The Dead Hand*, 74.

⁹⁷ Hoffman, *The Dead Hand*, 82.

⁹⁸ “Alaska’s Heritage: Air Transportation Chapter 4-12,” Alaska History and Cultural Studies, <http://www.akhistorycourse.org/articles/article.php?artID=177> (accessed 30 March 2012).

⁹⁹ “Ted Stevens Anchorage International Airport: History,” State of Alaska.

¹⁰⁰ “Ted Stevens Anchorage International Airport: History,” State of Alaska.

¹⁰¹ History of Trans-Arctic Aviation,” Arctic Portal,

<http://portlets.arcticportal.org/history-of-trans-arctic-aviation> (accessed 1 April 2012).

Technological breakthroughs increased the robustness of the air defense system. Continued investments in military airfield infrastructure contributed to the expanding commercial air industry. These Cold War investments in military and commercial infrastructure continue to support the US response to contemporary challenges.



Chapter 3

Contemporary Alaska

Alaska's strategic value increases constantly [...] the future will prove that its acquisition was one of our greatest investments. General William L. "Billy" Mitchell

Airpower and aviation contributed to opening up the Last Frontier. This chapter focuses on highlighting other areas that define Alaska's strategic importance today. Valuable natural resources located within Alaska and contested areas in the Arctic have gained increased significance. Because of Alaska's geostrategic location, the US can make sovereignty claims in the Arctic and profit from potential Arctic trade routes. Alaska's geostrategic location is also ideal for intercepting rogue ballistic missiles from North Korea and the Middle East. Alaskan based airpower and associated forces continue to conduct critical air defense missions that protect the US homeland.

Climate Change and Geopolitical Concerns

In 2010, President Obama declared the US an “Arctic Nation” in his National Security Strategy.¹ Recognition of Alaska’s access to the Arctic, since the US purchase in 1867, has continually increased in significance for nearly a century and a half, furthering US interests. Climate change has captivated international attention, and this environmental phenomenon is melting the polar icecaps and freeing up access to scarce and in-demand natural resources, as well as opening

¹ “National Security Strategy, May 2010,” The White House, 50, http://www.whitehouse.gov/sites/default/files/rss_viewer/national_security_strategy.pdf (accessed 14 April 2012).

new sea routes across the Arctic Ocean. Figure 6 depicts the impact of climate change on the Arctic ice from 1979 to 2011.²

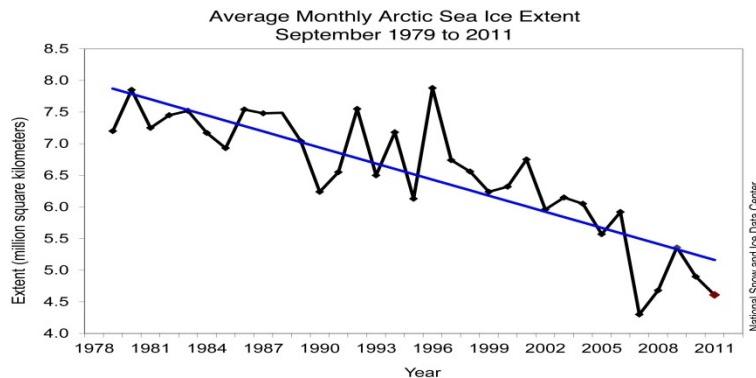


Figure 6: Average Monthly Arctic Sea Ice Extent

Source: *National Snow and Ice Data Center*

Once formidable Arctic passages, ice-bound during the long winters, are now open longer, presenting opportunities for maritime trade and commercial travel. Alaska also contains critical air and missile defense assets vital to US national security. This section focuses on how climate change is enhancing Alaska's geostrategic importance today and continues to offer opportunities for military operations based in Alaska against threats to the homeland.

Alaska's position in the Arctic enables the US to make territorial and economic claims. Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, and Sweden are the other Arctic states (see map in Chapter 2, Figure 3). "All eight countries are positioning themselves to protect their sovereignty, defend their competing territorial claims, and develop significant natural resources. Future disputes could involve shipping routes, potential environmental degradation, and local resident's concerns, as well as how best to combat terrorism

² "Summer 2011: Arctic Sea Ice Near Record Lows," Courtesy of the National Snow and Ice Data Center, <http://nsidc.org/arcticseaincnews/2011/10/summer-2011-arctic-sea-ice-near-record-lows/> (accessed 2 May 2012).

and transnational crimes.”³ Climate change has increased competition for resources among the five primary Arctic states centered on the North Pole.

Canada and the United States dispute how to divide the Beaufort Sea and the status of the Northwest Passage but continue to work cooperatively to survey the Arctic continental shelf; Denmark (Greenland) and Norway have made submissions to the Commission on the Limits of the Continental shelf (CLCS) and Russia is collecting additional data to augment its 2001 CLCS submission; record summer melting of sea ice in the Arctic has renewed interest in maritime shipping lanes and sea floor exploration; Norway and Russia signed a comprehensive maritime boundary agreement in 2010.⁴

The 1982 United Nations Convention Law of the Sea (UNCLOS) is the primary source for resolving international disputes and determining rights. UNCLOS also provides Arctic states exclusive rights to natural resources within their established economic exclusion zones (EEZs).⁵ Arctic states are actively seeking claims beyond the mandated 200-mile EEZ and must apply to extend claims up to 350 miles from their continental shelf.⁶

The Lomonosov Ridge, an underwater mountain range, is a point of contention between Canada, Denmark and Russia.⁷ These states each claim that the Lomonosov Ridge extends from their respective continental shelf, and so is within their larger zones.⁸ Approval of this claim would

³ James Jay Carafano Ph.D et al., “EUCOM Should Lead U.S. Combatant Commands in Defense of National Interests in the Arctic,” The Heritage Foundation, 1, <http://www.heritage.org/research/reports/2011/03/eucom-should-lead-us-combatant-commands-in-defense-of-national-interests-in-the-arctic> (accessed 15 April 2012).

⁴ “Oceans: Arctic Ocean,” CIA: The World Factbook, <https://www.cia.gov/library/publications/the-world-factbook/geos/xq.html> (accessed 14 April 2012).

⁵ Carafano, “EUCOM Should Lead,” 4.

⁶ Hobart King, “Who Owns the Arctic Ocean?” Geology.com, <http://geology.com/articles/who-owns-the-arctic.shtml> (accessed 2 May 2012).

⁷ “Putin Plays Down Talk of Battle For Arctic Resources,” BBC News Europe, <http://www.bbc.co.uk/news/world-europe-11397671> (accessed 2 May 2012).

⁸ “Putin Plays Down Talk of Battle For Arctic Resources.”

expand their EEZ and increase their share of the natural resources.⁹

Figure 7 illustrates Arctic claims, borders, and highlights the Lomonosov Ridge.¹⁰

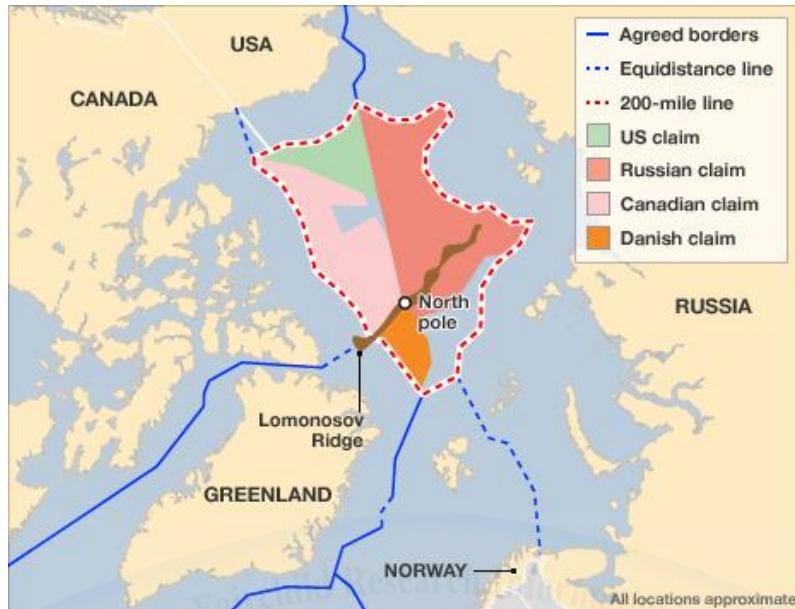


Figure 7: Arctic Claims

Source: *BBC News Europe*

The UN requires costly scientific evidence to support territorial claims, which involves mapping of the underwater continental shelf in areas of dispute.¹¹ Russia filed a claim that “extends from the undersea Lomonosov Ridge and Mendeleev Ridge to the North Pole.”¹² In 2001, the UN disapproved the claim.¹³ However, Russia is gathering evidence to support another claim in the 2012-2013 timeframe.¹⁴ In the meantime, Russia has remained assertive in the Arctic. In 2007, Russia boldly placed its flag on the seabed of the North Pole, which is located in the Lomonosov Ridge area.¹⁵

⁹ “Putin plays down talk of battle for Arctic Resources,” BBC News Europe.

¹⁰ “Putin plays down talk of battle for Arctic Resources,” BBC News Europe.”

¹¹ “Putin plays down talk of battle for Arctic Resources,” BBC News Europe.”

¹² Carafano, “EUCOM Should Lead,” 5.

¹³ “Putin plays down talk of battle for Arctic Resources,” BBC News Europe.

¹⁴ “Putin plays down talk of battle for Arctic Resources,” BBC News Europe.

¹⁵ Carafano, “EUCOM Should Lead,” 4.

Canada and Denmark plan to submit claims to the Lomonosov Ridge as well.¹⁶ Canada announced in September 2010 that it had collected sufficient proof to claim the Lomonosov Ridge.¹⁷ Part of the Northwest Passage claimed by Canada and Denmark is also located within this contested strategic ridge.¹⁸ The outcome of this claim will redefine Arctic rights and affect international maritime traffic.

The US does not recognize these claims to extend EEZs.¹⁹ “When other nations assert claims contrary to customary international law as reflected in the convention, the United States actively contests such claims through the FON [Freedom of Navigation Program]. In this manner, the United States has preserved its navigational rights and continue[s] to shape the international law of the sea.”²⁰ Nevertheless, beginning this spring through 2014, the Arctic-5 will bid on territory under the provisions of UNCLOS.²¹

The US is not among the 162 nations that have ratified the treaty since 1982.²² President Obama stated in May 2010 that the US would “pursue ratification of the United Nations Convention of the Law of the Sea.”²³ By ratifying the treaty, the US would have a voice in resolving

¹⁶ “Putin plays down talk of battle for Arctic Resources,” BBC News Europe.

¹⁷ Encyclopedia Britannica, s.v. “Arctic Regions: Year in Review 2010,” <http://www.britannica.com/EBchecked/topic/1739003/Arctic-Regions-Year-In-Review-2010?anchor=ref1101490> (accessed 24 April 2012).

¹⁸ Carafano, “EUCOM Should Lead,” 4

¹⁹ Carafano, “EUCOM Should Lead,” 2.

²⁰ Steven Groves, “Accession to the U.N. Convention On the Law of the Sea Is Unnecessary to Secure U.S. Navigational Rights and Freedoms,” The Heritage Foundation, <http://www.heritage.org/research/reports/2011/08/accession-to-un-convention-law-of-the-sea-is-unnecessary-to-secure-us-navigational-rights-freedoms> (accessed 2 May 2012).

²¹ Sarah Bracking, “Why Is Establishing the Arctic as Common Heritage so Important?” The Africa Report, <http://www.theafricareport.com/index.php/20120319501807548/columns/why-is-establishing-the-arctic-as-common-heritage-so-important-501807548.html>. (accessed 1 May 2012).

²² “Oceans and Law of the Sea,” United Nations, http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm (accessed 26 April 2012). United Nations, “

²³ “National Security Strategy, May 2010,” The White House, 50.

issues and determining Arctic rights.²⁴ The US remains the “odd man out, legally, because it's the only country with Arctic interests that hasn't signed onto the Law of the Sea.”²⁵ General Jacoby, Commander, US Northern Command, asserted that “as the commander responsible for the Arctic [...] it would be very helpful to have a seat at the table as we begin the lengthy process of determining [the boundaries of the] Continental Shelf and all the attributes of the Arctic that competing nations will be interested in.”²⁶

Ratification of UNCLOS has been contentious in the US. President Reagan was the first to oppose ratification due to concerns over deep-sea bed mining provisions.²⁷ President Clinton endorsed the revisions and forwarded them for Senate approval. Since then some argue that the UNCLOS does not support US interests, but places excessive restrictions. Under UNCLOS, the US would be required to provide a portion of gas and oil revenues obtained from the US continental shelf to the International Seabed Authority for redistribution to “developing countries.”²⁸ The US could also be at the mercy of unfavorable determinations made under UNCLOS. Opponents assert the US does not require “UNCLOS membership either to enjoy the freedom of the high seas or to exercise the right of innocent passage through the territorial waters of foreign nations. These rights and freedoms are among the oldest and most widely accepted principles of the law of the sea. They have been codified

²⁴ Cheryl Pellerin, “DoD Press Release: NORTHCOM Prioritizes Homeland Defense, Cyber, Partners,” Alex Jones’ Infowars, <http://www.infowars.com/dod-press-release-northcom-prioritizes-homeland-defense-cyber-partners/> (accessed 29 April 2012).

²⁵ Lee Teslik, “Who Owns the Arctic?,” Slate, http://www.slate.com/articles/news_and_politics/explainer/2007/10/who_owns_the_arctic.html (accessed 30 April 2012).

²⁶ Pellerin, “DoD Press Release,” Alex Jones’ Infowars.

²⁷ Groves, “Accession to the UNCLOS,” The Heritage Foundation. This paragraph derived from the same source.

²⁸ Groves, “Accession to the UNCLOS,” The Heritage Foundation.

twice, first in the Convention on the Territorial Sea and Contiguous Zone in 1958 and then in UNCLOS in 1982.”²⁹

The Arctic-5 in 2008 agreed to the Ilulissat Declaration, which committed these states to resolving Arctic territory disputes peacefully.³⁰ However, the Ilulissat Declaration does not account for military alliances and is not applicable to NATO pledges.³¹ In September 2010, Russian Foreign Minister Sergei Lavrov “warned that NATO, of which Canada and the three other Arctic powers are members, should not become involved in settling territorial disputes in the Arctic.”³² He stated that negotiation among the Arctic states and established principles were sufficient for conflict resolution.³³ The Chiefs of Defense from the eight Arctic states met in a forum for the first time in April 2012 to discuss Arctic challenges.³⁴

The US has not built up forces in the Arctic to contend with the rising Russian Arctic power. According to the Heritage Foundation, the Russian Arctic doctrine released in March 2009 indicates the primary goal is “transform[ing] the Arctic into Russia’s strategic resource base and make Russia a leading Arctic power by 2020.”³⁵ Russia seeks to secure its Arctic interests and protect its borders by increasing its military presence with Arctic brigades.³⁶

The US military has a significant role in the Arctic, because of Alaska’s long coastline on the Arctic Ocean. A realignment of Geographic Combatant Commands territorial boundaries recently took effect. Under

²⁹ Groves, “Accession to the UNCLOS,” The Heritage Foundation.

³⁰ Carafano, “EUCOM Should Lead,” 3.

³¹ Carafano, “EUCOM Should Lead,” 3.

³² “Russia and Canada Seek UN Ruling on Lomonosov Ridge,” BBC News Europe, <http://www.bbc.co.uk/news/world-europe-11331904> (accessed 25 April 2012).

³³ “Russia and Canada Seek UN Ruling on Lomonosov Ridge,” BBC News Europe.

³⁴ Trude Pettersen, “Arctic Generals Agree On Closer Ties,” Barents Observer, <http://barentsobserver.com/en/security/arctic-generals-agree-closer-ties> (accessed 29 April 2012).

³⁵ Carafano, “EUCOM Should Lead,” 5.

³⁶ “Russia to Field First Arctic Brigade in 2015,” RIA Novosti, http://en.rian.ru/military_news/20120221/171440711.html (accessed 23 May 2012).

the Unified Command Plan for 2011, USNORTHCOM assumed geographical responsibility for Alaska and no longer shares territorial responsibility with US Pacific Command (USPACOM).³⁷ There was no change in Alaskan force alignment as they remain under USPACOM control. Additionally, USNORTHCOM and US European Command both have oversight of designated areas in the Arctic region.³⁸ However, USNORTHCOM is the appointed advocate for securing Arctic capabilities for both Combatant Commands.³⁹ General Jacoby stated in 2012 that one of his priorities is “monitoring the unique and fast-changing domain of the Arctic.”⁴⁰ The reassignment of priorities must still be determined after the US determines what its Arctic strategy is. Vice Admiral Brian M. Salerno, US Coast Guard (USCG), stated, “We are in many ways an Arctic nation without an Arctic strategy.”⁴¹

US military forces in Alaska are not equipped to meet the challenges of the Arctic. The end of the Cold War resulted in reduced Department of Defense investments in the Arctic region.⁴² The Arctic Capabilities Assessment Working Group (ACAWG) stated, “Facilities located below the Arctic Circle, even those in Alaska, provide limited capability to support Arctic missions due to long transits required to reach the operating area.”⁴³ More airpower in the region is needed to support the gradual opening of the Arctic. The ACAWG white paper cited

³⁷ “Military: Unified Command Plan,” GlobalSecurity.org, <http://www.globalsecurity.org/military/agency/dod/unified-com.htm> (accessed 12 April 2012); “Unified Command Plan,” The White House, 06 April 2012, TAB, The World with Commander’s Areas of Responsibility map.

³⁸ “Unified Command Plan,” The White House, 06 April 2012, 9, 11.

³⁹ “Unified Command Plan,” The White House, 06 April 2012, 14.

⁴⁰ Pellerin, “DoD Press Release,” Alex Jones’ Infowars.

⁴¹ Peter Apps, “Melting Arctic May Redraw Global Geopolitical Map,” Reuters UK, <http://uk.reuters.com/article/2012/04/03/us-arctic-resources-idUSBRE8320DR20120403> (accessed 12 April 2012).

⁴² Department of Defense, “Report to Congress on Arctic Operations and the Northwest Passage,” OUSD (Policy), May 2011, 19.

⁴³ Arctic Capabilities Assessment Working Group White Paper, 13 March 2012, 9. Provided by NORTHCOM/J52. This group is an “Under Secretary level mechanism for improving cooperation and facilitating decision making” between members from the DOD (NORTHCOM) and DHS (USCG).

the potential for increased search and requirements and the risk of not having air stations in the Arctic to support these missions.⁴⁴ The paper recommended the development of air infrastructure, basing of aircraft, and assigning military personnel in North Slope, Alaska.⁴⁵

Additionally, the US lacks sufficient icebreakers to support and protect interests in the Arctic Ocean. Icebreaking capability enables the government, military, and commercial access to Arctic waters.

Additionally, “US-flagged ice-capable ships provide visible US sovereign maritime presence throughout the Arctic region.”⁴⁶ The US only has three icebreakers, of which only one is operational compared to 34 Russian icebreakers and 16 Canadian icebreakers.⁴⁷ The USCGC *Healy* is the sole operational US icebreaker and is based in Seattle, Washington with the other two docked vessels. The USCG told Congress that it requires at least six icebreakers, three medium and three heavy.⁴⁸ The DoD has chosen to rely on foreign icebreakers for additional support.⁴⁹ “This situation draws a parallel to the country’s lack of space shuttles, which has caused it to rely on Russian Soyuz rockets to reach the International Space Station.”⁵⁰

A 2011 Department of Defense report to Congress recommended, “Further evaluation of the future operating environment is required before entertaining significant investments in infrastructure or capabilities” and that “existing defense infrastructure (e.g., bases, ports, and airfields) is adequate to meet near- to mid-term US national security

⁴⁴ Arctic Capabilities Assessment Working Group White Paper, 13 March 2012, 9.

⁴⁵ Arctic Capabilities Assessment Working Group White Paper, 13 March 2012, 9.

⁴⁶ Department of Defense, “Report to Congress on Arctic Operations,” 3.

⁴⁷ Department of Defense, “Report to Congress on Arctic Operations,” 26-27.

⁴⁸ Martin Kaste, “In the Arctic Race, the U.S. Lags Behind,” NPR, <http://www.npr.org/2011/08/19/139681324/in-the-arctic-race-the-u-s-lags-behind> (accessed 27 April 2012).

⁴⁹ Department of Defense, “Report to Congress on Arctic Operations,” 27.

⁵⁰ Mia Bennett, “Can Us Lawmakers Stomach the Cost of New Icebreakers?” Alaska Dispatch, <http://www.alaskadispatch.com/article/can-us-lawmakers-stomach-cost-new-icebreakers> (accessed 27 April 2012).

interests.”⁵¹ As Chapter 1 and 2 illustrated, a crisis is generally required before investments are committed to Alaska.

A harsh winter in Nome, Alaska prevented the last fuel shipment of the year in November 2011. As a result, the Russian tanker Renda supplied Nome with 1.5 million gallons of fuel, with the aid of the icebreaker USCGC *Healy* in January 2012. The two ships departed Dutch Harbor, Alaska on 3 January and arrived in Nome ten days later traveling over 300 miles in ice-packed water. This historic event was the “first time that petroleum products have been delivered by sea to a Western Alaskan community through ice covered waters.”⁵² US Alaskan Senator Mark Begich commented that Nome's fuel-delivery problem “drives home the nation's need for a strengthened presence in the Arctic. It underscores the reality that despite seasonal reductions in the Arctic ice pack, we still need more icebreaking capacity.”⁵³

The Nome crisis brought attention to the dismal state of US icebreaking capacity in the Arctic. The USCGC *Healy*, a medium-capacity icebreaker, is more suited to support scientific exploration than heavy-duty commercial or military Arctic operations. Just prior to supporting the Nome mission, the USCGC *Healy* completed a tour lasting seven months in the Bering Strait and the Arctic, supporting NASA and the National Science Foundation, and also worked with Canada on mapping the Arctic Ocean.⁵⁴ One icebreaker is insufficient to meet current and expanding future needs. The outcome of the Nome crisis resulted in \$8 million allocated in the 2013 budget proposal to begin the

⁵¹ Department of Defense, “Report to Congress on Arctic Operations,” 3-4, 25.

⁵² “Multimedia Release: Healy, Renda Seen from Nome.” US Coast Guard, <http://www.d17.uscgnews.com/go/doc/780/1279019> (accessed 12 April 2012).

⁵³ Alex DeMarban, “Arctic Icebreaker Funded in Obama 2013 Budget,” Alaska Dispatch, <http://www.alaskadispatch.com/article/arctic-icebreaker-funded-obama-2013-budget> (accessed 1 May 2012).

⁵⁴ “US Coast Guard, “Cutter Healy, Renda to Bring aid to Nome,” Military.com, <http://www.military.com/news/article/coast-guard-news/cutter-healy-renda-to-bring-aid-to-nome.html> (accessed 12 April 2012)

process of obtaining a new USCG polar icebreaker.⁵⁵ Without the proper equipment, the US may encounter difficulties in securing its Arctic interests. One of these key American interests is access to natural resources.

Natural Resources

The Arctic Ocean is the smallest of the five oceans but is still almost one-and-one-half times the size of the US.⁵⁶ The Arctic polar region is the second largest desert in the world.⁵⁷ The Arctic area contains untapped natural resources such as “sand and gravel aggregates, placer deposits, poly-metallic nodules, oil and gas fields, fish, and marine mammals.”⁵⁸ Figure 8 details the Arctic natural resources from a Russian perspective.⁵⁹ Because of Alaska’s location in the Arctic, the US also stands to gain more natural resources from the region.

Alaska’s economy is dependent on natural resources. As such, the state is positioning itself to promote interest by uncovering additional mineral and energy resources, by conducting geophysical surveys, and by mapping.⁶⁰ Investors and federal government partnership is required for further exploration. The Alaskan Division of Geological and

⁵⁵ Office of Management and Budget, “Fiscal Year 2013 Budget of the Us Government,” The White House, 119, <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/budget.pdf> (accessed 14 April 2012).

⁵⁶ “Oceans: Arctic Ocean,” CIA World Factbook, <https://www.cia.gov/library/publications/the-world-factbook/geos/xq.html> (accessed 14 April 2012).

⁵⁷ “The World’s Largest Desert,” Geology.com, <http://geology.com/records/largest-desert.shtml> (accessed 24 April 2012). The Antarctic is the largest desert and the Sahara desert comes in at third.

⁵⁸ “Oceans: Arctic Ocean,” CIA World Factbook.

⁵⁹ “Natural Resources in the Arctic,” RIA Novosti, <http://en.rian.ru/infographics/20100628/159604153.html> (accessed 12 April 2012).

⁶⁰ “Fact Sheet: Alaska Strategic Minerals/Rare Earth Elements,” State of Alaska: Alaska Department of Natural Resources, http://dnr.alaska.gov/commis/priorities/Fact%20Sheet_Rare%20Earth%20Elements_Strategic%20Minerals.pdf (accessed 26 April 2012).

Geophysical Surveys (DGGS) has 12 mineral and seven energy projects planned or ongoing for Fiscal Year 2012.⁶¹

Natural resources in the Arctic

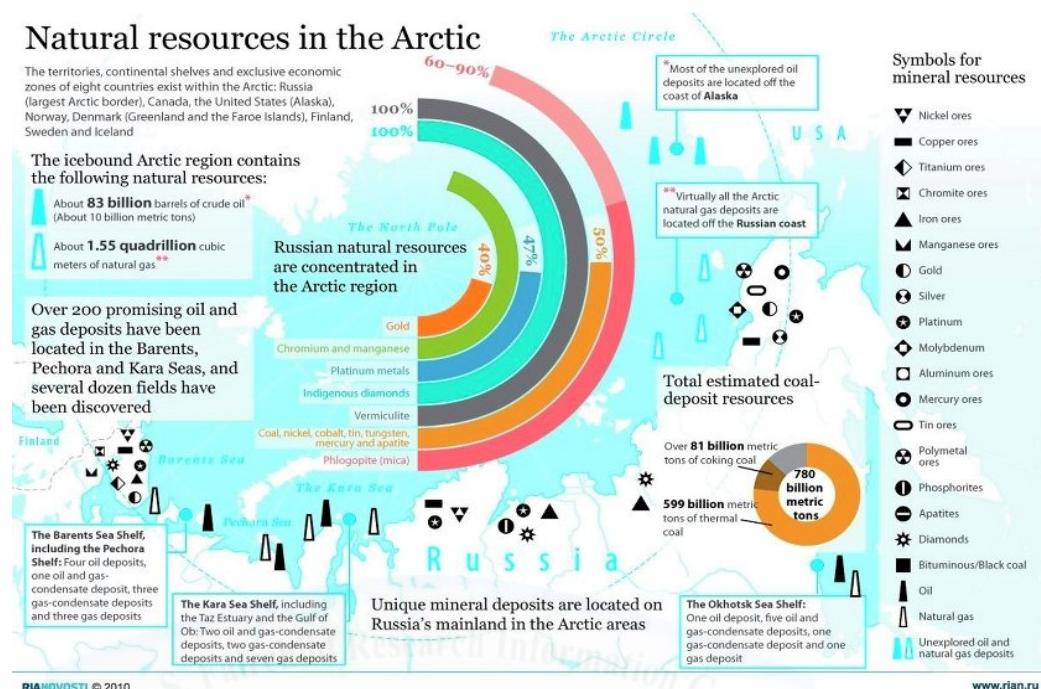


Figure 8: Natural Resources in the Arctic

Source: RIA Novosti

Minerals

According to Mr. Dan Sullivan, the Alaskan Commissioner for the Department of Natural Resources, “Alaska has much to offer the nation in the effort to secure a stable domestic supply of minerals.”⁶² For 2010, Alaskan mineral exports to China, Japan, Korea, and Spain were valued at \$1.3 billion.⁶³ In 2010, the total value of Alaska’s mineral industry was \$3.685 billion compared to \$2.966 billion in 2009.⁶⁴ Alaskan

⁶¹ “Fact Sheet,” State of Alaska.

⁶² Dan Sullivan, “Testimony On 2 June 2011 Before the Us House of Representatives, Subcommittee On Energy and Mineral Resources: National Strategic and Critical Minerals Policy Act and Resource Assessment of Rare Earth Act of 2011,” State of Alaska: Alaska Department of Natural Resources, 2, http://dnr.alaska.gov/commis/priorities/US_Subcommittee_Energy_and_Minerals_RE_Es.pdf (accessed May 19, 2012).

⁶³ Sullivan, “Testimony,” 2.

⁶⁴ “State Alaska Division of Geological and Geophysical Surveys Annual Report

minerals may aid in reinvigorating the economy and counterbalance the decline of petroleum production at Prudhoe Bay.⁶⁵ Currently, there are six large lode mines in Alaska.

Teck Resources Ltd.–NANA’s Red Dog Mine, one of the world’s largest zinc producers, received all permits and began mining the Aqqaluk deposit adjacent to the main Red Dog deposit, extending the mine’s life to 2031. Red Dog produced 593,043 tons of zinc, 121,144 tons of lead, and more than 6.7 million ounces of silver. Coeur’s Kensington underground gold mine complex near Juneau began mining on July 3 and produced 43,143 ounces of gold in 2010. Hecla Mining Co.’s Greens Creek Mine near Juneau produced more than 7.2 million ounces of silver in 2010, along with 68,838 ounces of gold, 74,496 tons of zinc, and 25,336 tons of lead. Kinross Gold’s Fort Knox Mine near Fairbanks produced 349,729 ounces of gold, and Sumitomo’s Pogo Mine produced 383,434 ounces of gold. Usibelli Coal Mine produced 2.06 million tons of coal. Placer gold production, from more than 225 operators, was 69,318 ounces.⁶⁶

These Alaskan resources represent a large portion of the earth’s minerals.

- *Coal:* 17% of the world’s coal, *2nd most in the world*
- *Copper:* 6% of the world’s copper, *3rd most in the world*
- *Lead:* 2% of the world’s lead, *6th most in the world*
- *Gold:* 3% of the world’s gold; *7th most in the world*
- *Zinc:* 3% of the world’s zinc; *8th most in the world*
- *Silver:* 2% of the world’s silver; *8th most in the world*
- *Rare Earth Minerals:* over 150 occurrences⁶⁷

Alaska contains in-demand rare earth elements (REE), which are valuable strategic minerals. REEs are “indispensable for military and high-technology applications, as well as clean/renewable-energy technologies (such as wind turbines, solar panels, batteries for electric

2011,” State of Alaska: Alaska Department of Natural Resources, 47, <http://www.dggs.alaska.gov/webpubs/dggs/ar/text/ar2011.PDF> (accessed 24 April 2012).

⁶⁵ “Alaska Division...Annual Report 2011,” State of Alaska, 37.

⁶⁶ D. J. Szumigala, L. A Harbo, and J. N. Adleman, “Alaska’s Mineral Industry 2010 Report,” State of Alaska: Alaska Department of Natural Resources, iv, <http://www.dggs.alaska.gov/webpubs/dggs/sr/text/sr065.PDF> (accessed 24 April 2012).

⁶⁷ Sullivan, “Testimony,” 2.

vehicles).⁶⁸ REEs transform crude oil into gasoline and create permanent magnets, which supports the miniaturization of electronics.⁶⁹ The US relies primarily on REE imports from China, placing the nation at a disadvantage.⁷⁰

China is the leader in the REE market, owns almost half of the world's REEs, and produces 97% of the global supply.⁷¹ "Recent curtailment of REE exports from China and reliance on the Chinese industry for processing and manufacturing critical REE-reliant products has heightened awareness of the fragility of the supply-demand chain for REEs worldwide."⁷² China has enacted trade quotas, increased charges on REEs, and announced that it is considerably limiting access to these precious REEs.⁷³

Alaska could be a potential domestic and international supplier of REEs. There are 70 identified areas in Alaska containing REEs (see Figure 9).⁷⁴ In addition, there are 40 million acres of "high mineral potential" lands in need of assessment.⁷⁵ The Bokan Mountain/Dotson Ridge property is an area in Alaska that contains a massive supply of rare earth metal oxides.⁷⁶ Measured in tonnage, this property is the 15th largest mineral supply of these metals in North America.⁷⁷ Bokan Mountain is unique compared to other US deposits, because it is "enriched with yttrium, dysprosium, and critical Heavy REEs, which are essential for the production of permanent magnets."⁷⁸

⁶⁸ "Alaska Division...Annual Report 2011," State of Alaska, 46.

⁶⁹ "Alaska Division...Annual Report 2011," State of Alaska, 46.

⁷⁰ "Alaska Division...Annual Report 2011," State of Alaska, 46.

⁷¹ "Fact Sheet," State of Alaska.

⁷² Sullivan, "Testimony," 2.

⁷³ Sullivan, "Testimony," 3. Speech made by Alaskan Governor Sean Parnell, State of Address, January 2011.

⁷⁴ "Alaska Division...Annual Report 2011," State of Alaska, 18 and 46 (map).

⁷⁵ Sullivan, "Testimony," 2.

⁷⁶ "Fact Sheet," State of Alaska.

⁷⁷ "Fact Sheet," State of Alaska.

⁷⁸ Sullivan, "Testimony," 2-3.

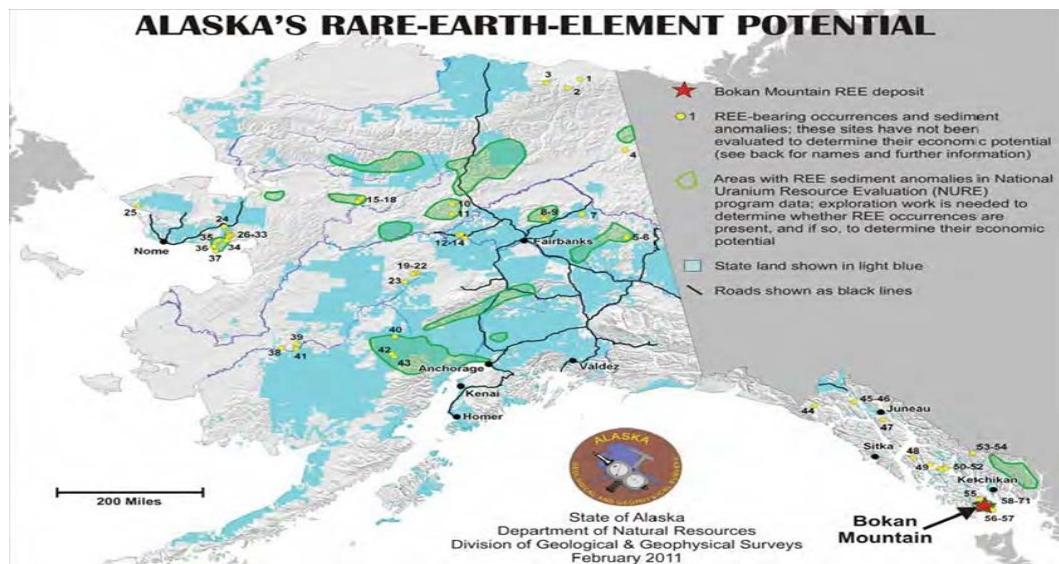


Figure 9: Alaska's Rare-Earth-Mineral Potential

Source: *State of Alaska: Division of Geological & Geophysical Surveys*

Alaska is encouraging REE development. The DGGS launched the Rare-Earth Elements and Strategic Minerals Assessment project in 2011. “The goals of this 3-year project are (1) to compile historic and industry-donated data in digital format; (2) to obtain new field and analytical data critical for assessing Alaska’s REE potential; (3) to evaluate the historic and new data to identify areas of Alaska with the highest REE potential, as well as those needing additional geologic evaluation; (4) to communicate the results of our work to the public; and (5) to publish the data and results of our studies on the DGGS website.”⁷⁹ Securing a share in the market requires investment in locating more REEs and the infrastructure to process these strategic minerals.⁸⁰ If not, the US will have to rely on China for processing, which, given the criticality of these resources, is strategically unwise.⁸¹

⁷⁹ “Alaska Division...Annual Report 2011,” State of Alaska, 46.

⁸⁰ Sullivan, “Natural Strategic and Critical Minerals,” 6.

⁸¹ Sullivan, “Natural Strategic and Critical Minerals,” 6.

Energy

Northern Alaska is a “world class petroleum province” and contains valuable gas reserves.⁸² However, oil and gas production is declining in Alaska. Figure 10 shows oil/gas fields and the exploration wells in the National Petroleum Reserve-Alaska (NPRA) area.⁸³ The North Slope region includes the NPRA and extends to the border of the Arctic National Wildlife Refuge (ANWR). Like minerals, further exploration, mapping, and infrastructure are required to make the NPRA more accessible to potential developers.⁸⁴ The investment costs are high, but the return can be rewarding.

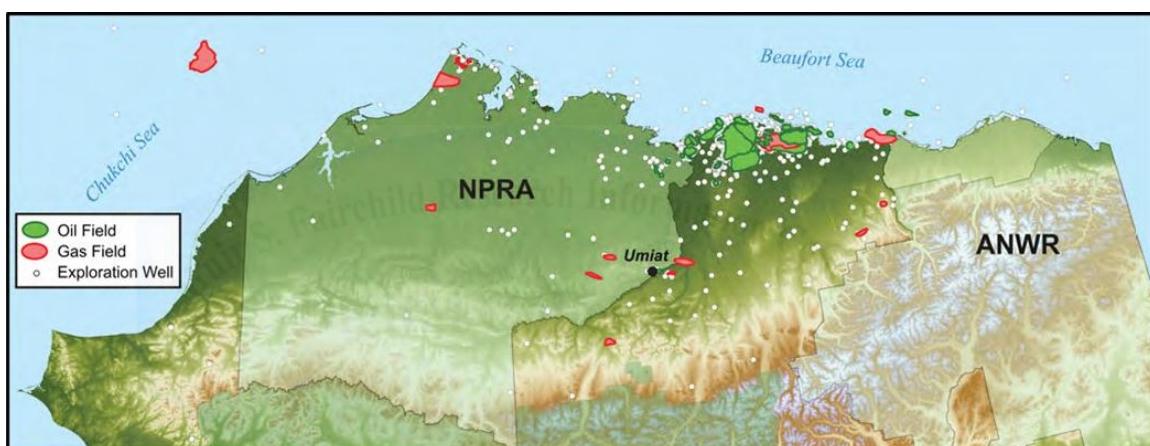


Figure 10: National Petroleum Reserve-Alaska

Source: *State of Alaska: Division of Geological & Geophysical Surveys*

The discovery of oil in Prudhoe Bay, Alaska along the Arctic Ocean in 1968 transformed the Alaskan economy.⁸⁵ The Trans-Alaska Pipeline (TAP), completed in 1977, transfers this oil through an 800-mile long pipeline.⁸⁶ The TAP system (TAPS) begins in the North Slope region in

⁸² “Alaska Division...Annual Report 2011,” State of Alaska, 30.

⁸³ “Alaska Division...Annual Report 2011,” State of Alaska, 30.

⁸⁴ “Alaska Division...Annual Report 2011,” State of Alaska, 30.

⁸⁵ “About Us,” Alyeska Pipeline Service Company, <http://www.alyeskapipe.com/about.html> (accessed 1 May 2012).

⁸⁶ “Pipeline Facts.” Alyeska Pipeline Service Company. <http://www.alyeskapipe.com/pipelinefacts.html> (accessed 1 May 2012).

Prudhoe Bay and ends at the marine terminal in Valdez.⁸⁷ Crude oil is stowed there and has been loaded onto more than 19,000 tankers at Valdez since 1 August 1977.⁸⁸ As of 2011, more than 16 billion barrels of oil have passed through TAPS. This system provides about 15 percent of the oil produced in the US.⁸⁹

The flow of oil through TAPS is slowing down. In 1989, it took only 4-days compared to 14-days today for oil to reach Valdez.⁹⁰ The Alyeska President testified to the House Finance Committee in May 2011 stating the slow oil problems would worsen over time and expects an annual 5-to- 6 percent decline.⁹¹ Figure 11 illustrates the historical oil production and the projected decline.⁹² Cooler oil temperatures combined with decreased throughput is a major concern.⁹³ Additionally, the original warm oil design of TAP did not account for decreased oil temperatures.⁹⁴ TAPS provides the Alaskan economy 90 percent of its revenues.⁹⁵

⁸⁷ Fact: Throughput, Flow Rate and Crude Oil,” Alyeska Pipeline Service Company, <http://www.alyeska-pipe.com/Pipelinefacts/TAPS%20Quick%20Facts.pdf> (accessed 1 May 2012).

⁸⁸ “Pipeline Facts: Valdez Marine Terminal,” Alyeska Pipeline Service Company, <http://www.alyeska-pipe.com/Pipelinefacts/MarineTerminals.html> (accessed 1 May 2012); “Pipeline Facts: Pipeline Quick Facts,” Alyeska Pipeline Service Company, <http://www.alyeska-pipe.com/pipelinefacts.html> (accessed 1 May 2012).

⁸⁹ “Pipeline Facts: Pipeline Operations,” Alyeska Pipeline Service Company, <http://www.alyeska-pipe.com/Pipelinefacts/PipelineOperations.html> (accessed 1 May 2012).

⁹⁰ Tom Barrett, “Testimony of Tom Barrett, President, Alyeska Pipeline Service Company On Declining Throughput, House Finance Committee,” AOGA: Alaska Oil and Gas Association, 3, <http://www.aoga.org/wp-content/uploads/2011/03/HB-110-Testimony-Tom-Barrett-Alyeska-031811.pdf> (accessed 1 May 2012).

⁹⁰ Barrett, “Testimony,” 2.

⁹¹ Barrett, “Testimony,” 2.

⁹² “Fact: Alaska Oil Production Decline,” Alyeska Pipeline Service Company, <http://www.alyeska-pipe.com/Pipelinefacts/TAPS%20Quick%20Facts.pdf> (accessed 1 May 2012).

⁹³ Barrett, “Testimony,” 2.

⁹⁴ Barrett, “Testimony,” 6.

⁹⁵ Purna Nemani, “State Nervously Assesses Trans-Alaskan Pipeline,” Courthouse News Service, <http://www.courthousenews.com/2012/03/19/44794.htm> (accessed 26 April 2012).

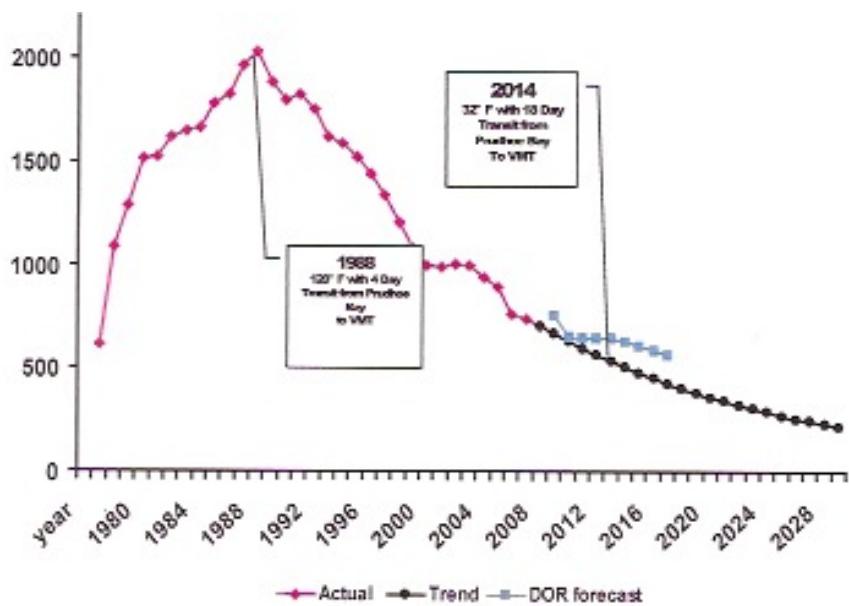


Figure 11: Alaskan Oil Production in Decline

Source: Alyeska Pipeline Service Company

Natural gas estimates of 35 trillion cubic feet are contained in the North Slope region.⁹⁶ On 30 March 2012, ExxonMobil, ConocoPhillips, BP and TransCanada announced a partnership to begin preparing for commercialization of the natural gas located in Point Thomson, an area within North Slope.⁹⁷ This settlement has been highly anticipated by Alaskans. According to Alaskan Governor Sean Parnell, there are 8 trillion cubic feet of natural gas and millions of barrels of oil and gas liquids located in Point Thomson.⁹⁸ The development of the Alaska Pipeline Project will be similar to the TAPS concept. The future pipeline will enable the gas to reach and compete in the international market. The major components of the settlement include:

⁹⁶ Pierre Bertrand, "Oil Majors in Talk Over \$40b Alaska Gas Pipeline," NASDAQ, <http://community.nasdaq.com/News/2012-03/oil-majors-discussing-40-billion-alaska-natural-gas-pipeline.aspx?storyid=128913> (accessed 26 April 2012).

⁹⁷ "Media Center, News Release: Exxonmobil, ConocoPhillips, BP, and Alaska Pipeline Project Working Together to Commercialize North Slope Natural Gas," Alaska Pipeline Project, http://thealaskapipelineproject.com/m.php?p=media_center (accessed 26 April 2012).

⁹⁸ "Newsroom: Governor Announces Point Thomson Settlement and Producer Alignment with APP," State of Alaska: Gas Pipeline Project Office, <http://www.gasline.alaska.gov/newsroom/newsroom.html> (accessed 27 April 2012).

- Increasing liquids production into the Trans Alaska Pipeline System (TAPS).
- Opening the Eastern North Slope to new development opportunities by adding infrastructure and a 70,000 barrels per day common carrier pipeline connecting to TAPS.
- Incentivizing and laying out a clear path and alternatives for full-field development, each of which will require billions of dollars in investment if pursued.
- Positioning North Slope gas for a large-scale gas pipeline project.
- Providing potential for significant gas volumes for in-state use no later than 2019.
- Requiring a commitment to develop a separate oil reservoir within Point Thomson.⁹⁹

This settlement opens a future Alaskan natural gas market and supports the productivity of TAPS.

Trade Routes

The Northwest Passage and the Northern Sea Route are the two primary waterways in the Arctic and both pass through the 53-mile long Bering Strait in the proximity of Alaska and Russia.¹⁰⁰ Figure 12 captures the northern Arctic water passages and location of the Arctic Bridge.¹⁰¹ This figure also illustrates the receding of the ice in the Arctic region due to climate change. As a result, this strait is accommodating increased maritime traffic with the use of icebreakers. According to Alaskan Lieutenant Governor Mead Treadwell, “\$1 billion worth of goods passed through the Bering Strait” in 2010 [...] “The ships,” he said, “are coming.”¹⁰²

⁹⁹ “Newsroom: Governor Announces Point Thomson,” State of Alaska.

¹⁰⁰ “Oceans: Arctic Ocean,” CIA: The World Factbook, <https://www.cia.gov/library/publications/the-world-factbook/geos/xq.html> (accessed 14 April 2012). The Northern Sea Route is also referred to as the Northeast Passage.

¹⁰¹ J-P Rodrigue Dr., C. Comtois, and B. Slack, “Polar Shipping Routes,” The Geography of Transport Systems, <http://people.hofstra.edu/geotrans/eng/ch1en/conc1en/polarroutes.html> (accessed 26 April 2012). Image reprinted by permission from Dr. Rodrigue.

¹⁰² Andrew E. Kramer, “Warming Revives Dream of Sea Route in Russian Arctic,” The New York Times, http://www.nytimes.com/2011/10/18/business/global/warming-revives-old-dream-of-sea-route-in-russian-arctic.html?_r=2&pagewanted=all (accessed 28 April 2012).

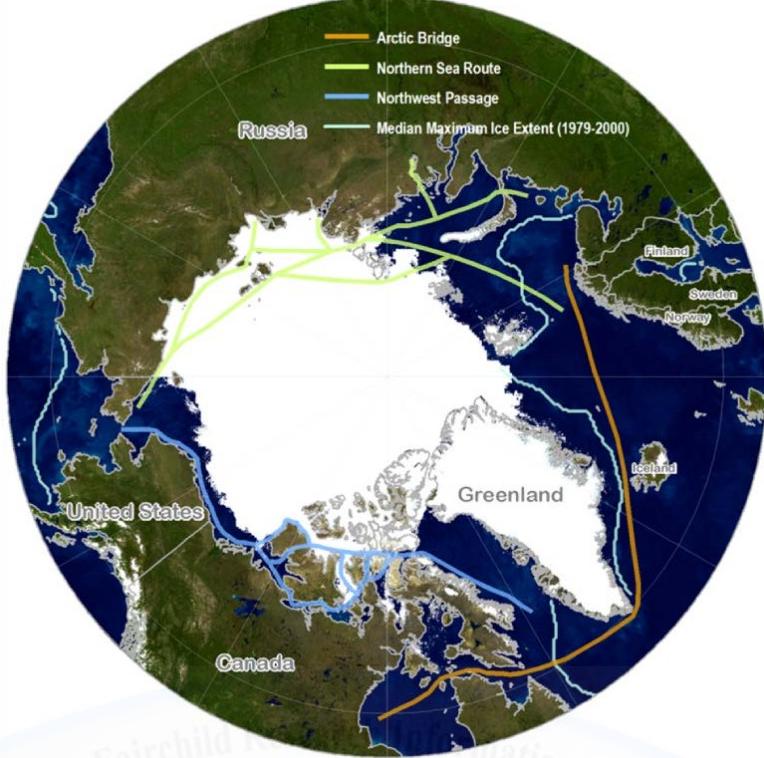


Figure 12: Polar Shipping Routes

Source: *J-P Rodrigue, The Geography of Transport Systems*

These two legendary Arctic routes have a potential to change global shipping patterns. In September 2008, a glimpse of the potential future occurred when for the first time both the Northwest Passage and the Northeast Passage, called the Northern Sea Route today, were simultaneously open.¹⁰³ The shortcut across the Arctic decreases travel time and translates to significant savings for maritime commercial traffic. Figure 13 contrasts the current trade routes with Arctic routes.¹⁰⁴

¹⁰³ Rebecca Lindsey, “Sea Ice Concentration,” Earth Observatory-NASA, <http://earthobservatory.nasa.gov/IOTD/view.php?id=9078> (accessed 30 April 2012). The National Ice Center reported the opening of both passages.

¹⁰⁴ Hugo Ahlenius, “Northern Sea Route and the Northwest Passage Compared with Currently Used Shipping Routes: Environmental Knowledge For Change,” UNEP GRID-Arendal, http://www.grida.no/graphicslib/detail/northern-sea-route-and-the-northwest-passage-compared-with-currently-used-shipping-routes_1336 (accessed 20 April 2012).

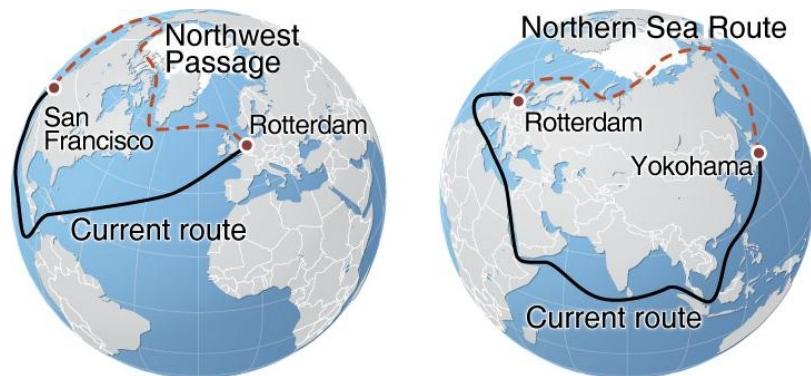


Figure 13: Sea Trade Routes

Source: *Hugo Ahlenius, UNEP/GRID-Arendal*

The Northwest Passage has challenged Arctic explorers for centuries. Roald Amundsen, a Norwegian, was the first Arctic explorer who successfully sailed the Northwest Passage. According to Amundsen's autobiography, he abruptly departed for this journey when a particularly generous creditor demanded payment within 24 hours and threatened him with charges of fraud.¹⁰⁵ As such, Amundsen quickly departed Oslo, Norway in June 1903 with a crew of six and reached Nome, Alaska in September 1906.¹⁰⁶ His inspiration for the journey was the writings of Arctic explorer Sir John Franklin.¹⁰⁷ Franklin and his crew attempted to navigate the Northwest Passage from 1845-1848.¹⁰⁸ However, his two ships froze into the ice, preventing further travels. Eventually every man on the expedition perished.¹⁰⁹ In contrast, the success of Amundsen's journey through the Northwest Passage is an inspiring historic event.

¹⁰⁵ Roald Amundsen, "Arctic Passage: My Life as an Explorer," PBS: NOVA, <http://www.pbs.org/wgbh/nova/arctic/amundsen.html> (accessed 26 April 2012).

¹⁰⁶ "Roald Amundsen: Polar Explorer," EnchantedLearning.com, <http://www.enchantedlearning.com/explorers/page/a/amundsen.shtml> (accessed 26 April 2012).

¹⁰⁷ Roald Amundsen, "Arctic Passage: My Life as an Explorer.

¹⁰⁸ *The Canadian Encyclopedia*, s.v. "Sir John Franklin," <http://www.thecanadianencyclopedia.com/articles/sir-john-franklin> (accessed 26 April 2012).

¹⁰⁹ *The Canadian Encyclopedia*, s.v. "Sir John Franklin."

The Northwest Passage remains accessible longer each season. According to Steve MacLean, President of the Canadian Space Agency, the route has been open every year for at least six weeks for the past 15 years and expected to remain open for longer periods in the future.¹¹⁰ This passage provides an alternative to the Panama Canal route and easier access to India and China.¹¹¹ The Northwest Passage route from East Asia and Western Europe is only 13,600 kilometers as compared to 24,000 kilometers using the Panama Canal.¹¹²

The Chinese recently sent their icebreaker “Xue Long” through the Northwest Passage. They conducted research in the coastal areas of Alaska and Canada.¹¹³ The Chinese are planning a trip along the Northern Sea Route in 2012. Alaskan lawmakers are concerned about “threats posed by an increasingly Arctic-oriented China and an apparent lack of concern by U.S. leaders about the country's obligations as an Arctic nation.”¹¹⁴ An Alaskan news source reported, “The Chinese want to see the Arctic Ocean's energy riches divided up among all nations -- according to their population.”¹¹⁵ Non-Arctic states want a share of the Arctic resources, and China is able to access the Arctic and represent their interests.

As noted earlier, some of Canada's claims do not have the support of the US. Canada claims that portions of the Northwest Passage are internal to its territory and stands to gain the most from the opening of

¹¹⁰ Jackie Northam, “Arctic Warming Unlocking a Fabled Waterway,” NPR, <http://www.npr.org/2011/08/15/139556207/arctic-warming-unlocking-a-fabled-waterway> (accessed 26 April 2012).

¹¹¹ Northam, “Arctic Warming Unlocking A Fabled Waterway,” NPR.

¹¹² Rodrigue, “Polar Shipping Routes,” The Geography of Transport Systems. Rotterdam is the largest port in Europe.

¹¹³ “Chinese Icebreaker to Travel Northern Sea Route This Summer,” Alaska Dispatch, <http://www.alaskadispatch.com/article/chinese-icebreaker-travel-northern-sea-route-summer> (accessed 27 April 2012).

¹¹⁴ “Chinese Icebreaker to Travel,” Alaska Dispatch.

¹¹⁵ Dan Fiorucci, “Lawmakers Press For Preservation of U.S. Resource Right in Arctic: Concern Over Interest by China,” KTUU.com, http://articles.ktuu.com/2012-03-12/arctic-ocean_31161975 (accessed 28 April 2012). Comments attributed to US Alaskan Senator Mark Begich.

this route.¹¹⁶ However, the US continues to operate as if the passage is an international waterway.¹¹⁷ Because of a few ice-free weeks per year, the Northwest Passage is generating international debate regarding ownership, rights, and access. The Northern Sea Route is receiving the same kind of attention.

The Russian government has maintained the Northern Sea Route since 1978, with its growing fleet of ice-breaking ships.¹¹⁸ The route opened in 1991 to international marine traffic.¹¹⁹ The Northern Sea Route from Rotterdam to Yokohama is 8,500 kilometers versus 20,600 kilometers via the Suez Canal.¹²⁰ According to Alaskan Lieutenant Governor Mead Treadwell, “Russia intends to make the Northern Sea Route, which passes Alaska’s front door, as important to global shipping and commerce as the Suez Canal. Major tanker loads of oil products, gas condensate, and mineral ores have come [Alaska’s] way already.”¹²¹

There are concerns that the Arctic routes may not be as profitable as desired.

- First, it is highly uncertain to what extent the receding perennial ice cover is a confirmed trend or simply part of a long term climatic cycle.
- Second, there is very limited economic activity around the Arctic Circle, implying that shipping services crossing the Arctic have almost no opportunity to drop and pick-up cargo as they pass through. Thus, unlike other long distance commercial shipping routes there is limited revenue generation potential for shipping lines along the Arctic route, which forbids the emergence of transshipment hubs. This value proposition could improve if

¹¹⁶ “Northwest Passage - Map of Arctic Sea Ice: Global Warming Is Opening Canada's Arctic,” Geology.com, <http://geology.com/articles/northwest-passage.shtml> (accessed 29 April 2012).

¹¹⁷ “Northwest Passage - Map of Arctic Sea Ice,” Geology.com.

¹¹⁸ “Sea Routes and Marine Transport,” The Arctic, <http://arctic.ru/economy-infrastructure/maritime-transport> (accessed 26 April 2012).

¹¹⁹ “Sea Routes and Marine Transport,” The Arctic.

¹²⁰ Rodrigue, “Polar Shipping Routes,” The Geography of Transport Systems.

¹²¹ Lieutenant Governor Mead Treadwell, “Russia Eyes Arctic -- What About D.C.?” Anchorage Daily News, <http://www.adn.com/2011/09/28/2094056/russia-eyes-arctic-what-about.html> (accessed 26 April 2012).

resources (oil and mining) around the Arctic are extracted in greater quantities.

- The Arctic remains a frontier in terms of charting and building a navigation system, implying uncertainties and unreliability for navigation. This implies that substantial efforts have to be made to insure that navigation can take in place in a safe manner.¹²²

Substantial investments are necessary to make these routes viable for commercial traffic. Additionally, obtaining insurance for trips through the Arctic may not be affordable due to the nature of the environment. This scenario is similar to building the infrastructure and establishing air routes to and through Alaska described in Chapter 1.

Air and Missile Defense

One of the primary military missions for forces based in Alaska today is Air and Missile Defense. The threats to US national security have changed, while Alaska has remained a key location to protect US interests against potential aggressors. This section details the importance of having US forces in Alaska and the value of investing Federal resources in this state.

Air

Alaskan-based air defenses continue to respond to potential violators of US airspace, ensuring protection of the homeland. Many of the intercepts of Russian aircraft have occurred in the Alaskan Air Defense Identification Zone, which is a buffer to US airspace.¹²³ Since 1992, there have been more than 66 Russian intercepts, a significant decrease from the Cold War period.¹²⁴ However, according to NORAD,

¹²² Rodrigue, “Polar Shipping Routes,” *The Geography of Transport Systems*. Passage reprinted by permission from Dr. Rodrigue.

¹²³ Erik Holmes, “More Russian Bombers Flying Off Alaska Coast,” *Air Force Times*, http://www.airforcetimes.com/news/2008/04/airforce_pacaf_040608/ (accessed 30 April 2012).

¹²⁴ TSgt William J. Allen, “Hunting the Soviet Bear – a study of Soviet Aircraft Intercepts near Alaska, 1961-2006,” 69. Provided by 673rd Air Base Wing History Office, Joint

“its fighters made 45 intercepts of Russian military flights between 2007 and 2010, compared with eight between 1999 and 2006.”¹²⁵ General Chandler, Commander, Pacific Air Forces, reported that for a 10-month period beginning in June 2007 there were 16 intercepts of Russian bombers off the Alaskan coast.¹²⁶ This increase in Russian activity was not sustained, but does indicate the need for Alaskan forces to remain flexible and vigilant.

Alaskan Command (ALCOM) is the focal point for the modernization of the Joint Pacific Alaska Range Complex (JPARC). Proposed updates to this complex will provide the ideal location for air, land and sea forces to train together and refine their skills. JPARC “will bring together the services’ existing training ranges: the Air Force’s 66,000-square-mile Pacific Alaska Range Complex, home to the Red Flag Alaska exercise; the Army’s new \$80 million Battle Area Complex and Combined Arms Combat Training Facility near Fort Greely, Fort Wainwright and Fairbanks, Alaska; and 58,000 square miles of ocean and air space in the Gulf of Alaska.”¹²⁷

Public support is critical for JPARC modernization approval. As of 30 March 2012, the JPARC environmental impact statement is available for public input until 7 June 2012. According to ALCOM Public Affairs, a record of decision is expected in the 2013-2014 timeframe.¹²⁸ The proposed JPARC enhancements and expansions would do the following:

Base Elmendorf-Richardson. Additional intercept numbers from 2007-2012 updated by 673 ABW/HO; Dan Elliott article provided additional intercept data, “NORAD chiefs expect Arctic will get busier,” Army Times, <http://www.armytimes.com/news/2011/05/ap-norad-expect-busy-arctic-050811/> (accessed 30 April 2012).

¹²⁵ Elliott, “NORAD chiefs expect Arctic will get busier.”

¹²⁶ Holmes, “More Russian Bombers Flying Off Alaska Coast,” Air Force Times.

¹²⁷ Erik Holmes, “Alaskan Command Sets up Joint Training Range,” Air Force Times, http://www.airforce-times.com/news/2009/10/airforce_alaska_range_102609w/ (accessed 30 April 2012).

¹²⁸ Joan Smart, Alaskan Command, Public Affairs, JPARC phone conversation, 2 May 2012.

- Enable realistic joint training and testing to support emerging technologies,
- Respond to recent battlefield experiences, and
- Enable the Services to train with tactics and new weapons systems to meet combat and national security needs so military personnel can succeed in their mutually supportive combat roles.¹²⁹

Figure 14 details the proposed updates to the JPARC.¹³⁰

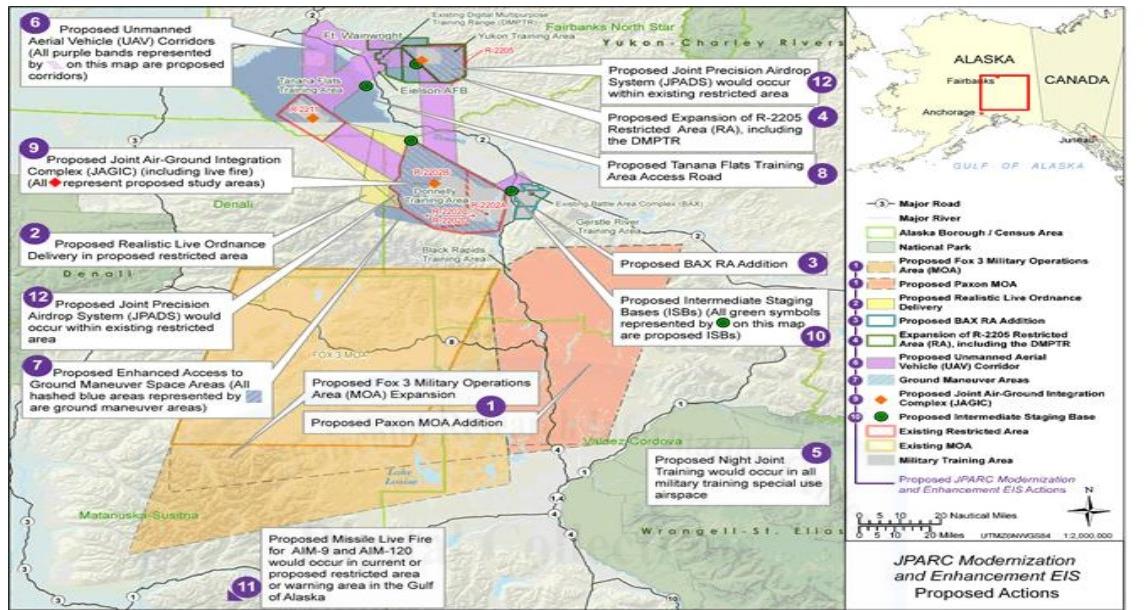


Figure 14: JPARC Modernization/Enhancement EIS Proposal

Source: *JPARC Website*

Missile Defense

President Ronald Reagan's "Star Wars" vision has become a different type of Missile Defense reality. Modifications to existing older Alaskan infrastructure supports the ongoing US Missile Defense initiative. Additional investments in Alaska support the robust Ballistic Missile Defense System (BMDS). "Missile defense plays an important role in the broader U.S. international security strategy, supporting both

¹²⁹ "Home Page." JPARC: Joint Pacific Alaska Range Complex. <http://jparceis.com/jparc.aspx> (accessed 2 May 2012).

¹³⁰ "Proposed Actions," JPARC: Joint Pacific Alaska Range Complex, http://jparceis.com/prop_actions.aspx (accessed 27 April 2012).

deterrence and diplomacy.”¹³¹ Figure 15 illustrates the Ground-based Midcourse Defense (GMD) elements in Alaska that are part of the BMDS.¹³²

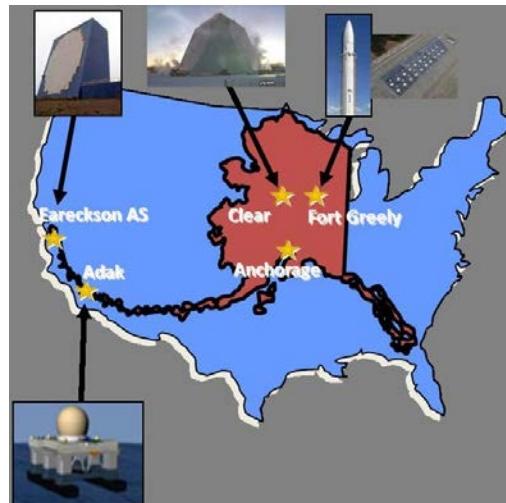


Figure 15: Missile Defense Infrastructure: Alaska

Source: *Missile Defense Agency Public Affairs, Fort Greely, Alaska*

Continuing developments by Iran and North Korea to improve long-range missiles could potentially hold the US homeland at risk.¹³³ “As the threat of missiles launched from Iran, North Korea, or coalitions of hostile parties grows, so does the need for more robust defenses—particularly when no matter where on earth a missile is launched from, it would take 33 minutes or less to hit the U.S. target it was programmed to destroy.”¹³⁴ BMDS enables the US to respond to ballistic missile threats and defend against limited ICBM assaults. “USNORTHCOM is responsible for directing missile defense operations to protect the

¹³¹ Frank A. Rose, “A U.S. State Department Perspective On the Phased Adaptive Approach to Missile Defense: Remarks to the Middle East Missile,” U.S. Department of State, <http://www.state.gov/t/avc/rls/187774.htm> (accessed 1 May 2012).

¹³² Graphic in presentation provided by Missile Defense Agency Public Affairs, Fort Greely, Alaska: "Approved for Public Release 10-MDA-5250."

¹³³ US Department of Defense, 2010 Ballistic Missile Review Fact Sheet, 3 March 2010. Document provided by Missile Defense Agency Public Affairs, Fort Greely, Alaska.

¹³⁴ “New Start and Missile Defense: We Are 33 Minutes Away...,” The Heritage Foundation, <http://www.heritage.org/research/factsheets/2010/11/new-start-and-missile-defense-we-are-33-minutes-away> (accessed 25 April 2012).

homeland from hostile acts while assisting the Missile Defense Agency in developing improved capability.”¹³⁵ The following section summarizes the critical GMD infrastructure in Alaska.

The history of the post at what is now Fort Greely, Alaska began in 1942.¹³⁶ Fort Greely was a stop along the Lend Lease route during World War II (discussed in Chapter 2). Since then the mission of Fort Greely continues to evolve from supporting cold weather testing and training to becoming an integral part of the BMDS. According to Colonel George Bond, a Missile Defense officer, the location of Fort Greely is ideal to “intercept a missile out of North Korea, [and] block an ICBM fired out of the Middle East.”¹³⁷

Currently there are 26 ground-based interceptors (GBIs) at Fort Greely. Vandenberg Air Force Base, California contains another four GBIs. The intent of the GBIs is to “destroy enemy missiles mid-way through flight, essentially at the edge of space.”¹³⁸ The Alaskan National Guard launch crews at Fort Greely are a Fire Control Node and have the ability to launch the interceptors at Vandenberg Air Force base, too. The back-up Fire Control Node site is located in Colorado Springs. Fort Greely is the “focal point for Ground Based Midcourse Defense” (GMD).¹³⁹

On 6 August 1955, the post was named after Arctic explorer General Adolphus Washington Greely, because of his contributions to the

¹³⁵ House Armed Services Committee, “6 March 2012 Statement of General Charles H. Jacoby, Jr., United States Army, Commander, United States Northern Command and North American Aerospace Defense Command,” Armed Services Committee, 5, http://armedservices.house.gov/index.cfm/files/serve?File_id=41d00c3a-9497-4f95-8c42-f3394d903a68 (accessed 25 April 2012).

¹³⁶ “History of Fort Greely,” The Official Website of United States Army Garrison Fort Greely, <http://www.greely.army.mil/about/history.aspx> (accessed 1 May 2012).

¹³⁷ Jason Moore, “Alaska Still Has Role in Nation’s Missile Defense Program,” Scribd, <http://www.scribd.com/doc/35721057/Sea-Based-X-Band-radar-guide> (accessed 1 May 2012). Comments made by Col Bond at the Anchorage Chamber of Commerce.

¹³⁸ Shelby G. Spires, “Missile Defense Radar Not Used to Detect North Korea Launch,” al.com, http://blog.al.com/breaking/2009/04/missile_defense_radar_not_used.html (accessed 27 April 2012).

¹³⁹ Ralph Scott, Missile Defense Agency Public Affairs, Fort Greely, Alaska, email 27 April 2012.

establishment of the Alaska Communication System in the early 1900s.¹⁴⁰ General Mitchell worked for General Greely, ensuring the installation of this system as a young lieutenant. General Mitchell stated, “In new countries the first effort is to get means of communication. In Alaska the telegraph was the wedge which cleft open the country to communications.”¹⁴¹ As such, General Greely’s early influence continues to be felt.

Cobra Dane is a radar site located at Eareckson Air Station on the island of Shemya, Alaska along the Aleutian chain. The radar began operating at Shemya in 1977.¹⁴² Improvements to Cobra Dane since then enable support of the missile defense mission. “The upgrade improves midcourse BMDS sensor coverage by providing acquisition, tracking, object classification, and data that can be used for cueing, launch of interceptor missiles [at Fort Greely and Vandenberg], and course updates of interceptors while retaining the sites legacy intelligence and space track missions.”¹⁴³ Cobra Dane has the capability to detect objects up to 3000 miles out.¹⁴⁴

Eareckson Air Station first supported troops in 1943 during World War II. During the Cold War, this island stop along the Great Circle Route supported commercial and military air refueling.¹⁴⁵ The base originally called Shemya Air Force Base was renamed after Colonel William Olmstead Eareckson on 6 April 1993. Colonel Eareckson commanded and flew bombing missions from Shemya during the Aleutian Campaign in WWII. “He introduced low-level skip bombing and

¹⁴⁰ “History of Fort Greely,” The Official Website of United States Army Garrison.”

¹⁴¹ Brig Gen William L. “Billy” Mitchell, *The Opening of Alaska: 1901-1903*, ed. Lyman L. Woodman ([Anchorage?]: Cook Inlet Historical Society, 1982), x.

¹⁴² “Space: Eareckson Air Station,” GlobalSecurity.org, <http://www.globalsecurity.org/space/facility/shemya.htm> (accessed 2 May 2012).

¹⁴³ Missile Defense Agency Fact Sheet, “Cobra Dane Upgrade,” Approved for Public Release 11-MDA-6087, 28 March 2011. Document provided by Missile Defense Agency Public Affairs, Fort Greely, Alaska.

¹⁴⁴ “Cobra Dane Upgrade Fact Sheet,” Missile Defense Agency Fact Sheet.

¹⁴⁵ “Island History,” Eareckson Air Station, http://chugach-eareckson.com/index.php?pr=Island_History (accessed 2 May 2012).)

forward air control procedures long before they became common practices in other war theaters.”¹⁴⁶

The original mechanical radar at Clear Air Force Station, Alaska was replaced with a dual-faced, steady-state, phased-array radar in 2001.¹⁴⁷ The radar continues to support the missile warning and space surveillance missions. Ongoing upgrades to the radar will result in the additional missile defense mission and inclusion into the BMDS by Fiscal Year 2017.¹⁴⁸ These upgrades will enable the radar at Clear Air Force Base to provide real-time “threat ballistic missile tracking data to commit launch interceptors and to update the target tracks to the interceptor while the interceptor is in flight.”¹⁴⁹

Adak, Alaska is the initial designated homeport of the Sea-Based X-Band Radar (SBX).¹⁵⁰ The SBX is mobile manned radar that “provides an advanced capability to the overall Ballistic Missile Defense System, greatly increasing the Missile Defense Agency’s ability to conduct operational and realistic testing of the BMDS, while providing an operational capability to the Combatant Commands.”¹⁵¹ SBX provides information and aids in the guiding of the GBIs at Fort Greely and Vandenberg, regardless of from where it is operating.¹⁵²

Adak is another island in the Aleutians that was critical during World War II. This island was a staging area for the retake of Attu and Kiska islands from the Japanese. Military presence on Adak has not

¹⁴⁶ “Space: Eareckson Air Station,” GlobalSecurity.org.

¹⁴⁷ “Space: Clear AFS, AK,” GlobalSecurity.org, <http://www.globalsecurity.org/space/facility/clear.htm> (accessed 2 May 2012).

¹⁴⁸ “Clear Upgraded Early Warning Radar, Presentation provided by Ralph Scott, Missile Defense Agency Public Affairs, Fort Greely, Alaska, email 27 April 2012.

¹⁴⁹ Missile Defense Agency Fact Sheet, “Upgraded Early Warning Radars, AN/FPS-132,” Approved for Public Release 12-MDA-6629, 23 March 2012. Document provided by Missile Defense Agency Public Affairs, Fort Greely, Alaska.

¹⁵⁰ According to Ralph Scott, Missile Defense Agency Public Affairs, the homeport of SBX will be redesignated.

¹⁵¹ “Sea-Based X-Band Radar Fact Sheet,” Missile Defense Agency. Approved for Public Release 12-MDA-6629, 23 March 2012. Document provided by Missile Defense Agency Public Affairs, Fort Greely, Alaska.

¹⁵² Spires, “Missile defense radar not used to detect North Korea launch,” ai.com.

been continuous. Adak's position was also advantageous during the Cold War, supporting fleet communications, listening posts, and anti-submarine patrol aircraft.¹⁵³

The GMD element in Alaska is a critical contributor to the BMDS. Figure 16 illustrates how the overall BMDS should operate.¹⁵⁴ According to the 2010 Ballistic Missile Defense Review, "the ballistic missile threat is increasing both quantitatively and qualitatively, and is likely to continue to do so over the next decade."¹⁵⁵

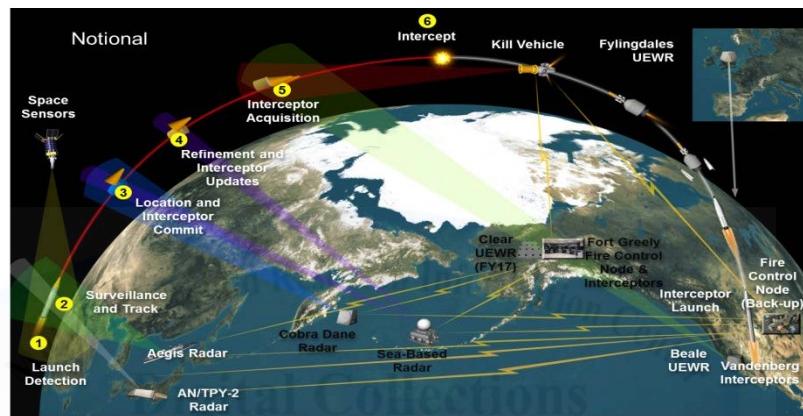


Figure 16: An Integrated Approach to Ballistic Missile Defense

Source: *Missile Defense Agency Public Affairs, Fort Greely, Alaska*

Alaska's natural resources and geostrategic location define the Last Frontier's importance. As climate change progresses the Arctic will become an additional front that requires a robust US air and sea force presence. Alaskan natural resources are vital to the US economy. Accessing additional resources reduces reliance on foreign suppliers. Airpower projected from Alaska enables the US to protect its territory. Additionally, Alaskan based Missile Defense shields the US from hostile

¹⁵³ "Adak Historical Guide," Adak Update, <http://www.adakupdate.com/historical.html> (accessed May 2, 2012).

¹⁵⁴ "An Integrated Approach to Ballistic Missile Defense," Presentation provided by Ralph Scott, Missile Defense Agency Public Affairs, Fort Greely, Alaska, email 27 April 2012. The image was modified to highlight the installations in Alaska. Clear Upgrade Early Warning Site added and labeled Vandenberg interceptors on the slide.

¹⁵⁵ US Department of Defense, 2010 Ballistic Missile Review Fact Sheet, 3 March 2010.

ballistic missiles. Alaska's significance continues to endure the test of time.



Chapter 4

Conclusion

General Mitchell's advocacy of Alaska brought attention to the state's geostrategic significance. Because of his airpower vision and the advocacy of Alaskan policymakers, a robust military presence eventually secured the Alaskan territory. Mitchell's oversight of the Alaska Flying Expedition in 1920 was a success providing the groundwork and expertise for an-around-the-world flight in 1924, with a notable stop in Alaska. Mitchell communicated the importance of Alaska to General Arnold as early as 1919. This may have influenced the latter's Alaskan perspective as well. In 1934, Arnold led the historic Alaskan Flight and personally communicated the need for investing in Alaskan defenses when, upon his return to the US, he met with President Franklin D. Roosevelt. Developing relationships with local and national decision makers and satisfying what he saw as a strategic need with a solution was critical in securing funds for Alaskan defenses.

Assigning sufficient military personnel and establishing a defense infrastructure in Alaska contributed to the Allied victory during World War II. The Japanese divided their stretched forces to contend with the US Aleutian threat as part of their preparations for the Japanese offensive plan that culminated with the Battle of Midway. But while Japan retreated from the Central Pacific after its defeat at Midway, Japanese forces retained control of Attu and Kiska in the Aleutian Island chain. Air patrols kept Alaska and the US mainland safe from further Japanese advances, and eventually continued defeat in other sectors forced the Japanese to evacuate the Aleutians. The short distance from Alaskan bases to Japanese targets here enabled the Air Service to place

the Japanese Kurile Islands at risk with air bomb drops. From the Aleutian Islands, US aircraft could now threaten Japanese territory.

But the importance of Alaska was not confined to the Pacific theater. Additionally, the US secured air superiority in the North Pacific and developed new air routes aiding the Russians with the Lend Lease program. US pilots in Alaska provided training and the aircraft for transfer along the Northwest Staging Route or the Alaskan-Siberian route to the Soviet Union. This initiative contributed to the defeat of Germany. Overall in the Second World War, the geostrategic significance of Alaska required a combination of military forces and a robust defense and logistical infrastructure, which contributed to the Allied victory over multiple adversaries.

General Mitchell's air vision for Alaska became a reality during the Cold War period. He recognized the importance of Alaska to US national defense, encouraged establishing airways, and understood the potential economic benefits of commercial air in Alaska.¹ Policymakers and military leaders leveraged Alaska's strategic location throughout the Cold War to deter the Soviet Union while supporting commercial air developments. US investments in legacy air, radar, and communication systems in Alaska ensured North America was safe from Soviet air and ICBM/SLBM threats. The establishment and maintenance of air routes transiting Alaska led to increased commercial traffic. Military airfield infrastructure and surplus military aircraft contributed to the expanding commercial air industry. The utilization of the Alaskan hub decreased travel times, reduced overall expenses and made air travel more efficient.

General Mitchell recognized the economic value of Alaska.² He cautioned, "If a country does not take care of its valuable possessions, like Alaska, they will be grabbed up and devoured by one of the

¹ Brigadier General William Mitchell, *America, Air Power, and the Pacific*, conclusions-4. Call # 168.7419.30, IRIS # 01147594, undated manuscript, AFHRA, Maxwell AFB AL..

² Brig Gen William L. "Billy" Mitchell, edited by Lyman L. Woodman, *The Opening of Alaska: 1901-1903*, Cook Inlet Historical Society, 1982, 2.

predatory nations.”³ Today, US policymakers advocating for Alaska have their eyes on the Arctic, seeking to ensure US interests remain secure and protected. The state’s proximity to Russia’s growing Arctic influence, combined with China’s interest and recent presence in the Arctic, has alarmed some in Alaska. As a world power, the US cannot afford to minimize the importance of the Arctic region and its impact on access and ownership of abundant natural resources. By taking an active role, the US will be able to influence a fair and peaceful resolution of territorial disputes and a distribution of the assets and natural resources in the Arctic in line with US strategic concerns.

The foundation of the Alaskan economy is its rich natural resources. The years of harvesting petroleum at the Prudhoe Bay nexus of the Alaskan pipeline have begun to curtail future oil assessments throughout the area. Nevertheless, Alaskan oil remains a significant portion of US domestic energy production. The continuing energy needs of the US and the industrialized world has amplified the importance of Alaska’s enormous natural gas deposits, and also a burgeoning rare earth element supply. Further exploration has revealed large untapped reserves of natural gas, oil, and minerals. Accessing these resources in the harsh Arctic climate is costly. However, as Prudhoe Bay showed during the oil boom of the 1980’s, the return in investment benefits the economy. The projected Alaska Pipeline Project could provide Alaska and the US a dramatic economic boost. Leveraging domestic natural resource supplies reduces US reliance on the foreign market. As noted in Chapter 3, the dependency on Chinese-supplied rare earth elements places the US at a strategic disadvantage. Harvesting the REEs in Alaska and developing the capability to produce REEs in the US is necessary to protect future domestic interests and economic self-sufficiency.

³ Mitchell, *The Opening of Alaska*, 2.

The US today possesses a declining operational capacity in the Alaskan Arctic, potentially limiting access to secure territory or a robust ability to provide search and rescue operations. Climate change exacerbates this issue because of extended access to the Northern trade routes. The decreased travel time of the Northern sea routes may be worth the price of transiting through the rough Arctic conditions. Investing in increased icebreaking capability, associated air support, redistributing military assets, and increasing support of the Coast Guard should be considered crucial, as climate change progresses. Additional US assets may be required to support Northern sea routes. Investing in infrastructure along the northern Alaskan coast should also be pursued as the Northwest Passage becomes a more frequently used transportation artery. These routes will provide economic opportunities and security challenges for Alaska and the nation.

Increased US capability in the Alaskan Arctic will be required because of a probable increase in maritime traffic. A larger USCG presence is necessary for patrolling the seas and protecting US territory. The US military continues to conduct air and missile defense missions in Alaska to protect the US homeland from its most dire threat, surprise attack by nuclear-equipped air and sea forces . Air forces continue to patrol the Alaskan coast deterring and intercepting threats to US airspace. While the installations located throughout Alaska provide additional support to the vital Ballistic Missile Defense System.

The US is an Arctic nation because of Alaska's location. With this status, the US has a responsibility to become more active with respect to Arctic issues. In 2011, NORTHCOM was appointed lead Arctic advocate in the US military infrastructure, but US policymakers remain divided on approving UNCLOS, the primary source for resolving maritime concerns in the region. The other seven Arctic states and several other nations have committed to UNCLOS. Russia continues to submit territorial claims in the Arctic Ocean, and other Arctic states are preparing claims

to gain more natural resources and territory. US influence is not currently nearly as robust as Russia's in the Arctic. The geopolitical importance of the region will escalate because of scarce untouched natural resources in the Arctic region. Therefore, US policymakers must reach a consensus on UNCLOS in order to insure equal representation and protection of US interests when determinations on division of Arctic resources are rendered.

Historically, the combination of developing air power and Alaska's critical geographic location impelled Billy Mitchell to advocate for its central priority in US global strategy. Alaska's key role in Cold War deterrence, and its position on the shortest air route from North America to Asia, meant that its strategic importance to the US increased in the second half of the 20th century. Despite the end of the Cold War, Alaska's importance has remained a cornerstone of US interests. Vast resources, global climate change, and new defense technology have caused the Arctic to emerge in the 21st century as a region with profound economic, military, and logistic importance, not only to the nations whose territory is within the Arctic circle, but to the entire world. Today, because of Alaska's geostrategic location and access to natural resources, it is clear that Billy Mitchell's nearly century-old assessment about the region is even more true today. Alaska remains "the most strategic place in the world."⁴

⁴ Mitchell, *The Opening of Alaska*, viii.

Bibliography

Articles

- “About Us.” Alyeska Pipeline Service Company.
<http://www.alyeska-pipe.com/about.html> (accessed 1 May 2012).
- “Adak Historical Guide.” Adak Update.
<http://www.adakupdate.com/historical.html> (accessed May 2, 2012).
- Ahlenius, Hugo. “Northern Sea Route and the Northwest Passage Compared with Currently Used Shipping Routes: Environmental Knowledge For Change.” UNEP GRID-Arendal.
http://www.grida.no/graphicslib/detail/northern-sea-route-and-the-northwest-passage-compared-with-currently-used-shipping-routes_1336 (accessed 20 April 2012).
- “Alaska Airlines History by Decade.” Alaska Airlines.
<http://www.alaskaair.com/content/about-us/history/overview.aspx> (accessed 1 April 2012). .
- “Alaska’s Heritage, Chapter 4-12 Air Transportation.” Alaska History and Cultural Studies.
<http://www.akhistorycourse.org/articles/article.php?artID=177> (accessed 30 March 2012).
- Amundsen, Roald. “Arctic Passage: My Life as an Explorer.” PBS: NOVA.
<http://www.pbs.org/wgbh/nova/arctic/amundsen.html> (accessed 26 April 2012).
- Apps, Peter. “Melting Arctic May Redraw Global Geopolitical Map.”
Reuters UK. <http://uk.reuters.com/article/2012/04/03/us-arctic-resources-idUSBRE8320DR20120403> (accessed 12 April 2012).
- “Aviation History Timeline.” The Charles A. and Anne Morrow Lindbergh Foundation.
<http://www.lindberghfoundation.org/docs/index.php/aviation-history-timeline> (accessed 30 March 2012).
- Barrett, Tom. “Testimony of Tom Barrett, President, Alyeska Pipeline Service Company On Declining Throughput, House Finance Committee.” AOGA: Alaska Oil and Gas Association.
<http://www.aoga.org/wp-content/uploads/2011/03/HB-110-Testimony-Tom-Barrett-Alyeska-031811.pdf> (accessed 1 May 2012).
- Bennett, Mia. “Can Us Lawmakers Stomach the Cost of New Icebreakers?” Alaska Dispatch.
<http://www.alaskadispatch.com/article/can-us-lawmakers-stomach-cost-new-icebreakers> (accessed 27 April 2012).

- Bertrand, Pierre. "Oil Majors in Talk Over \$40B Alaska Gas Pipeline." NASDAQ. <http://community.nasdaq.com/News/2012-03/oil-majors-discussing-40-billion-alaska-natural-gas-pipeline.aspx?storyid=128913> (accessed 26 April 2012).
- Bracking, Sarah. "Why Is Establishing the Arctic as Common Heritage so Important?" The Africa Report. <http://www.theafricareport.com/index.php/20120319501807548/columns/why-is-establishing-the-arctic-as-common-heritage-so-important-501807548.html>. (accessed 1 May 2012).
- Carafano, James Jay Ph.D, Ariel Cohen Ph.D, Sally McNamara, and Richard Weitz Ph.D. "Eucom Should Lead U.s. Combatant Commands in Defense of National Interests in the Arctic." The Heritage Foundation. <http://www.heritage.org/research/reports/2011/03/eucom-should-lead-us-combatant-commands-in-defense-of-national-interests-in-the-arctic> (accessed 15 April 2012).
- "Chinese Icebreaker to Travel Northern Sea Route This Summer." Alaska Dispatch. <http://www.alaskadispatch.com/article/chinese-icebreaker-travel-northern-sea-route-summer> (accessed 27 April 2012).
- "Cold War, Sep 1, 1983: Korean Airlines Flight Shot Down by Soviet Union." History.com. <http://www.history.com/this-day-in-history/korean-airlines-flight-shot-down-by-soviet-union> (accessed 1 April 2012).
- "Criminal Occurrence Description: 01 Sep 1983." Aviation Safety Network. <http://aviation-safety.net/database/record.php?id=19830901-0> (accessed 1 April 2012).
- "Criminal Occurrence Description: 20 April 1978." Aviation Safety Network. <http://aviation-safety.net/database/record.php?id=19780420-1> (accessed 1 April 2012).
- DeMarban, Alex. "Arctic Icebreaker Funded in Obama 2013 Budget." Alaska Dispatch. <http://www.alaskadispatch.com/article/arctic-icebreaker-funded-obama-2013-budget> (accessed 1 May 2012).
- Elliott, Dan. "NORAD Chiefs Expect Arctic Will Get Busier." ArmyTimes. <http://www.armytimes.com/news/2011/05/ap-norad-northcom-expect-busy-arctic-050811/> (accessed 30 April 2012).
- "Fact: Alaska Oil Production Decline." Alyeska Pipeline Service Company. <http://www.alyeskapipe.com/Pipelinefacts/TAPS%20Quick%20Facts.pdf> (accessed 1 May 2012).
- "Fact: Throughput, Flow Rate and Crude Oil." Alyeska Pipeline Service Company. <http://www.alyeskapipe.com/Pipelinefacts/TAPS%20Quick%20Facts.pdf> (accessed 1 May 2012).

- Fiorucci, Dan. "Lawmakers Press For Preservation of U.S. Resource Right in Arctic: Concern Over Interest by China." KTUU.com
http://articles.ktuu.com/2012-03-12/arctic-ocean_31161975
(accessed 28 April 2012).
- Groves, Steven. "Accession to the U.N. Convention On the Law of the Sea Is Unnecessary to Secure U.S. Navigational Rights and Freedoms." The Heritage Foundation.
<http://www.heritage.org/research/reports/2011/08/accession-to-un-convention-law-of-the-sea-is-unnecessary-to-secure-us-navigational-rights-freedoms> (accessed 2 May 2012).
- "Harriman Expedition Retraced, Community Profile: Little Diomede." PBS.
<http://www.pbs.org/harriman/current/profiles/diomede.html>
(accessed 21 March 2012).
- "History of Fort Greely." The Official Website of United States Army Garrison Fort Greely.
<http://www.greely.army.mil/about/history.aspx> (accessed 1 May 2012).
- "History of Trans-Arctic Aviation." Arctic Portal.
<http://portlets.arcticportal.org/history-of-trans-arctic-aviation>
(accessed 1 April 2012).
- Hoh, John L. Jr. "Tailing the Red Tail of Northwest Airlines (part 1)." Suite101.com.
http://archive.suite101.com/article.cfm/airline_liveries/116318
(accessed 1 April 2012).
- Holmes, Erik. "Alaskan Command Sets up Joint Training Range." Air Force Times.
http://www.airforcetimes.com/news/2009/10/airforce_alaska_range_102609w/ (accessed 30 April 2012).
- Holmes, Erik. "More Russian Bombers Flying Off Alaska Coast." Air Force Times.
http://www.airforcetimes.com/news/2008/04/airforce_pacaf_040608/ (accessed 30 April 2012).
- "Home Page." JPARC: Joint Pacific Alaska Range Complex.
<http://jparceis.com/jparc.aspx> (accessed 2 May 2012).
- "Island History," Eareckson Air Station, Chugach McKinley, Inc., no date,
<http://chugach-eareckson.com/.>
- Kaste, Martin. "In the Arctic Race, the U.s. Lags Behind." NPR.
<http://www.npr.org/2011/08/19/139681324/in-the-arctic-race-the-u-s-lags-behind> (accessed 27 April 2012).
- King, Hobart. "Who Owns the Arctic Ocean?" Geology.com.
<http://geology.com/articles/who-owns-the-arctic.shtml> (accessed 2 May 2012).

- Kramer, Andrew E. "Warming Revives Dream of Sea Route in Russian Arctic." *The New York Times*.
http://www.nytimes.com/2011/10/18/business/global/warming-revives-old-dream-of-sea-route-in-russian-arctic.html?_r=2&pagewanted=all (accessed 28 April 2012).
- "Lend-Lease History, ALSIB: Alaskan-Siberia, 1942-1945." Bravo 369 Flight Foundation.
<http://www.bravo369.org/lend%20lease/lend.html> (accessed 20 February 2012).
- Lindsey, Rebecca. "Sea Ice Concentration," Earth Observatory-NASA,
<http://earthobservatory.nasa.gov/IOTD/view.php?id=9078>
(accessed 30 April 2012).
- "Maps of Polar Regions and Oceans: Arctic Region." University of Texas Libraries. <http://www.lib.utexas.edu/maps/> (accessed 27 March 2012).
- "Media Center, News Release: Exxonmobil, ConocoPhillips, BP, and Alaska Pipeline Project Working Together to Commercialize North Slope Natural Gas." Alaska Pipeline Project.
http://thealaskapipelineproject.com/m.php?p=media_center
(accessed 26 April 2012).
- "Merrill Field: Anchorage Aviation History." Municipality of Anchorage.
http://www.muni.org/Departments/merrill_field/Pages/History.aspx (accessed 1 April 2012).
- "Military History in Alaska, 1867 - 2000." Joint Base Elmendorf-Richardson.
<http://www.jber.af.mil/library/factsheets/factsheet.asp?id=5304>
(accessed 25 March 2012).
- "Military: Unified Command Plan." GlobalSecurity.org.
<http://www.globalsecurity.org/military/agency/dod/unified-com.htm> (accessed 12 April 2012).
- "Military: War Plan Orange." GlobalSecurity.org.
<http://www.globalsecurity.org/military/ops/war-plan-orange.htm>
(accessed 16 February 2012).
- Moore, Jason. "Alaska Still Has Role in Nation's Missile Defense Program." Scribd. <http://www.scribd.com/doc/35721057/Sea-Based-X-Band-radar-guide> (accessed 1 May 2012).
- "Multimedia Release: Healy, Renda Seen from Nome." United States Coast Guard.
<http://www.d17.uscgnews.com/go/doc/780/1279019> (accessed 12 April 2012).
- Naka, F. Robert, and William W. Ward. "Distant Early Warning Line Radars: The Quest For Automatic Signal Detection." *Lincoln Laboratory Journal* 12, no. 2 (2000): 181-183.
- "Natural Resources in the Arctic." RIA Novosti.
<http://en.rian.ru/infographics/20100628/159604153.html>
(accessed 12 April 2012).

- Nemani, Purna. "State Nervously Assesses Trans-Alaskan Pipeline." Courthouse News Service.
<http://www.courthousenews.com/2012/03/19/44794.htm> (accessed 26 April 2012).
- "New Start and Missile Defense: We Are 33 Minutes Away...." The Heritage Foundation.
<http://www.heritage.org/research/factsheets/2010/11/new-start-and-missile-defense-we-are-33-minutes-away> (accessed 25 April 2012).
- "Newsroom: Governor Announces Point Thomson Settlement and Producer Alignment with App." State of Alaska: Gas Pipeline Project Office.
<http://www.gasline.alaska.gov/newsroom/newsroom.html> (accessed 27 April 2012).
- Northam, Jackie. "Arctic Warming Unlocking a Fabled Waterway." NPR.
<http://www.npr.org/2011/08/15/139556207/arctic-warming-unlocking-a-fabled-waterway> (accessed 26 April 2012).
- "Northwest Passage - Map of Arctic Sea Ice: Global Warming Is Opening Canada's Arctic." Geology.com.
<http://geology.com/articles/northwest-passage.shtml> (accessed 29 April 2012).
- "Oceans and Law of the Sea." United Nations.
http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm (accessed 26 April 2012).
- "Oceans: Arctic Ocean." CIA: The World Factbook.
<https://www.cia.gov/library/publications/the-world-factbook/geos/xq.html> (accessed 14 April 2012).
- Ongtooguk, Paul. "Alaska's Cultures: Military in Alaska." Alaska History and Cultural Studies.
<http://www.akhistorycourse.org/articles/article.php?artID=446> (accessed 21 March 2012).
- Pellerin, Cheryl. "DoD Press Release: NORTHCOM Prioritizes Homeland Defense, Cyber, Partners." Alex Jones' Infowars.
<http://www.infowars.com/dod-press-release-northcom-prioritizes-homeland-defense-cyber-partners/> (accessed 29 April 2012).
- Pettersen, Trude. "Arctic Generals Agree On Closer Ties." Barents Observer. <http://barentsobserver.com/en/security/arctic-generals-agree-closer-ties> (accessed 29 April 2012).
- "Pipeline Facts." Alyeska Pipeline Service Company.
<http://www.alyeska-pipe.com/pipelinefacts.html> (accessed 1 May 2012).
- "Pipeline Facts: Pipeline Operations," Alyeska Pipeline Service Company,
<http://www.alyeska-pipe.com/Pipelinefacts/PipelineOperations.html> (accessed 1 May 2012).

- “Pipeline Facts: Valdez Marine Terminal.” Alyeska Pipeline Service Company. <http://www.alyeska-pipe.com/Pipelinefacts/MarineTerminals.html> (accessed 1 May 2012).
- “Proposed Actions.” JPARC: Joint Pacific Alaska Range Complex. http://jparceis.com/prop_actions.aspx (accessed 27 April 2012).
- “Putin Plays Down Talk of Battle For Arctic Resources.” BBC News Europe. <http://www.bbc.co.uk/news/world-europe-11397671> (accessed 2 May 2012).
- “Roald Amundsen: Polar Explorer.” EnchantedLearning.com. <http://www.enchantedlearning.com/explorers/page/a/amundsen.shtml> (accessed 26 April 2012).
- Rodrigue, J-P Dr., C. Comtois, and B. Slack. “Polar Shipping Routes.” The Geography of Transport Systems. <http://people.hofstra.edu/geotrans/eng/ch1en/conc1en/polarroutes.html> (accessed 26 April 2012).
- “Russia and Canada Seek UN Ruling On Lomonosov Ridge.” BBC News Europe. <http://www.bbc.co.uk/news/world-europe-11331904> (accessed 25 April 2012).
- “Russia to Field First Arctic Brigade in 2015.” RIA Novosti. http://en.rian.ru/military_news/20120221/171440711.html (accessed 23 May 2012).
- “Sea Routes and Marine Transport.” The Arctic. <http://arctic.ru/economy-infrastructure/maritime-transport> (accessed 26 April 2012).
- “Space: Clear AFS, AK.” GlobalSecurity.org. <http://www.globalsecurity.org/space/facility/clear.htm> (accessed 2 May 2012).
- “Space: Eareckson Air Station.” GlobalSecurity.org. <http://www.globalsecurity.org/space/facility/shemya.htm> (accessed 2 May 2012).
- Spires, Shelby G. “Missile Defense Radar Not Used to Detect North Korea Launch.” al.com. http://blog.al.com/breaking/2009/04/missile_defense_radar_not_used.html (accessed 27 April 2012).
- “Strategic Air Defense: NORAD at 40 Historical Overview.” FAS: Federation of American Scientists. <http://www.fas.org/nuke/guide/usa/airdef/norad-overview.htm> (accessed 25 March 2012).
- “Summer 2011: Arctic Sea Ice Near Record Lows.” NSIDC: National Snow and Ice Data Center. <http://nsidc.org/arcticseainews/2011/10/summer-2011-arctic-sea-ice-near-record-lows/> (accessed 2 May 2012).

- “Ted Stevens Anchorage International Airport: History.” State of Alaska: Alaska Department of Transportation & Public Facilities.
<http://dot.alaska.gov/anc/about/history.shtml> (accessed 1 April 2012).
- Teslik, Lee. “Who Owns the Arctic?” Slate.
http://www.slate.com/articles/news_and_politics/explainer/2007/10/who_owns_the_arctic.html (accessed 30 April 2012).
- “The Arctic-Introduction.” The Arctic Portlet.
<http://portlets.arcticportal.org/introduction-to-the-arctic?layout=blog> (accessed 30 April 2012).
- “The Aviator.” The Early Birds of Aviation, Inc.
<http://earlyaviators.com/emartja1.htm> (accessed 17 January 2012).
- “The World’s Largest Desert,” Geology.com,
<http://geology.com/records/largest-desert.shtml> (accessed 24 April 2012).
- Treadwell, Lt Gov Mead. “Russia Eyes Arctic -- What About D.C.?”
 Anchorage Daily News.
<http://www.adn.com/2011/09/28/2094056/russia-eyes-arctic-what-about.html> (accessed 26 April 2012).
- “US Army in World War II, the War in the Pacific, Strategy and Command: The First Two Years.” Ibiblio: The Public's Library and Digital Archive. <http://www.ibiblio.org/hyperwar/USA/USA-P-Strategy/Strategy-1.html#cn41> (accessed 16 February 2012).
- “US Coast Guard. “Cutter Healy, Renda to Bring Aid to Nome.” Military.com. <http://www.military.com/news/article/coast-guard-news/cutter-healy-renda-to-bring-aid-to-nome.html> (accessed 12 April 2012).
- Wolk, Herman S. “Making the H-Bomb.” *Air Force Magazine.com* 92, no. 3 (March 2009), <http://www.airforce-magazine.com/MagazineArchive/Pages/2009/March%202009/0309H-Bomb.aspx> (accessed 25 March 2012).
- “World War II, Jul 5, 1940: United States Passes Export Control Act.” History.com. <http://www.history.com>this-day-in-history/united-states-passes-export-control-act> (accessed 24 May 2012).

Books

- Chandonnet, Fern, ed., *Alaska at War, 1941-1945: The Forgotten War Remembered*, Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993, Anchorage, AK: Alaska at War Committee, 1995.
- Cloe, John Haile, and with Michael F. Monaghan. *Top Cover For America: the Air Force in Alaska, 1920-1983*. Missoula, MT.: Pictorial Histories Pub Co, 1984.

- Hoffman, David E. *The Dead Hand: the Untold Story of the Cold War Arms Race and Its Dangerous Legacy*. 1st Anchor Books ed. New York: Anchor, 2010.
- Hutchinson, Kevin Don. *World War in the North Pacific: Chronology and Fact Book*. Westport, CT: Greenwood Press, 1994.
- Lindbergh, Anne Morrow. *North to the Orient*. Rahway, NJ: Quinn & Boden Company, Inc, 1958.
- Mitchell, William L. "Billy." *The Opening of Alaska: 1901-1903*. Edited by Lyman L. Woodman. [Anchorage?]: Cook Inlet Historical Society, 1982.
- Morenus, Richard. *DEW Line: Distant Early Warning, the Miracle of America's First Line of Defense*. N.p.: Rand McNally, 1957.
- Rottman, Gordon L. *World War II Pacific Island Guide: a Geo-Military Study*. Westport, Conn.: Greenwood, 2002.
- Western Electric Company, *The Dew Line Story* ([New York?]: Western Electric Company, 1958),
<http://www.porticus.org/bell/pdf/dewline.pdf> (accessed 25 March 2012).
- Yarger, Harry R. *Strategy and the National Security Professional: Strategic Thinking and Strategy Formulation in the 21st Century*. Westport, CT.: Praeger, 2008.

Briefings/Point Papers/Memos/Messages

- "An Integrated Approach to Ballistic Missile Defense." Presentation, date. Provided by Missile Defense Agency, Public Affairs, Fort Greely, Alaska.
- Arctic Capabilities Assessment Working Group White Paper. 13 March 2012. Provided by NORTHCOM/J52.
- "Clear Upgraded Early Warning Radar. Presentation, date. Provided by Missile Defense Agency, Public Affairs, Fort Greely, Alaska.
- "Unified Command Plan." The White House. 06 April 2012.

Classified Source

History & Research Division, History of Headquarters Strategic Air Command, 1 January-30 June 1960, (Historical Study No 82, Volume I) (Secret), Call # K416.01-82, IRIS # 01056930, AFHRA, Maxwell AFB AL. Information extracted is unclassified and approved for release 27 March 2012.

Fact Sheets

- “2010 Ballistic Missile Review Fact Sheet.” US Department of Defense, 3 March 2010.
- “Cobra Dane Upgrade Fact Sheet.” Missile Defense Agency, 28 March 2011.
- “Eleventh Air Force History.” Joint Base Elmendorf-Richardson.
<http://www.jber.af.mil/library/factsheets/factsheet.asp?id=5421> (accessed 25 March 2012).
- “Fact Sheet: Alaska Strategic Minerals/Rare Earth Elements.” State of Alaska: Alaska Department of Natural Resources.
http://dnr.alaska.gov/commis/priorities/Fact%20Sheet_Rare%20Earth%20Elements_Strategic%20Minerals.pdf (accessed 26 April 2012).
- “Sea-Based X-Band Radar Fact Sheet.” Missile Defense Agency. 23 March 2012.
- “Upgraded Early Warning Radars, AN/FPS-132 Fact Sheet.” Missile Defense Agency, 23 March 2012.

Historical Documents

- Air Corps Tactical School. “Strategic Possibilities of Alaska: 1934-1935.” Staff Study, April-June 1935. Call # 248-501-17, IRIS #00163543, AFHRA, Maxwell AFB AL.
- “Alaskan Flight: Arnold’s Report.” MICFILM 43796, IRIS #01102971, L/C Box 262, in the Murray Green Papers. AFHRA, Maxwell AFB AL.
- “Alaskan Flight: Excellent Press Coverage,” MICFILM 43796, IRIS #01102971, L/C Box 262, in the Murray Green Papers. AFHRA, Maxwell AFB AL.
- “Alaska Women Gets Six-Gun to Ward Off Airplanes, Thinks They are Great Birds of Prey.” *Denver Post*. 25 Dec 1920. Call #168.7058-5, IRIS #01008171, in the Lt C. C. Nutt Papers. AFHRA, Maxwell AFB AL.
- “Army Air Corps Record in Flying the Mail.” MICFILM 43796, IRIS #01102971, Foulois L/C Box 14, in the Murray Green Papers. AFHRA, Maxwell AFB AL.
- “General Arnold DFC Medal Citation.” 1936. MICFILM 43796, IRIS #01102971, in the Murray Green Papers. AFHRA, Maxwell AFB AL.
- McBain, Alastair. “Reminiscences of Alaska-1934.” Letter. 25 May 1971. MICFILM 43796, IRIS #01102971. AFHRA, Maxwell AFB AL.
- Menoher, Maj Gen Chas. T., Director of the Air Service, to Chief of Staff. Memorandum: 8 April 1920. Call #168.7058-5, IRIS # 01008171, in the Lt C. C. Nutt Papers. AFHRA, Maxwell AFB AL.

- Mitchell, William. "Mitchell wants Arnold to Start Thinking about Alaskan and Round-the-World Flights-December 1919." Letter: 27 December 1919. In the Murray Green Papers, MICFILM 43796, IRIS #01102971, Mitchell L/C Box 7. AFHRA, Maxwell AFB AL.
- Nutt, Lt C. C. "Alaskan Flying Expedition." 1921. Call #168.7058-5, IRIS # 01008171, in the Lt C. C. Nutt Papers. AFHRA, Maxwell AFB AL.
- Patrick, Maj Gen Mason M., Chief of Air Service, War Department, to Rear Admiral Frederick C. Billard, Commandant, Coast Guard, Treasury Department, Washington D.C. Memorandum: 28 May 1924. Call #167.401-27, IRIS #00120741, Published in 1965 commemorating the flight. AFHRA, Maxwell AFB AL.
- Ransom, Mudge A. *Alaska Leg: United States Army Air Service First Around the World Flight: April 6, 1924 to September 28, 1924*. 1965. Call #167.401-27, IRIS #00120741, in the Army Air Service Papers. AFHRA, Maxwell AFB AL.
- Rice, Major Neil W. "Regarding Alaska." Memorandum: 11 June 1942. MICFILM #28185, Frames 411-421, IRIS #02053309, in the Henry H. Arnold Papers. AFHRA, Maxwell AFB AL.
- Streett, Capt St. Clair. "The First Alaskan Air Expedition," *The National Geographic Magazine* XLI, no. 5, (May 1922), Call #168.7058-5, IRIS #01008171, in the Lt C. C. Nutt Papers. AFHRA, Maxwell AFB AL.
- Zeuslar, F. A. "A Summary of the Flight from Seattle to the Commander Islands." *Alaska Leg: United States Army Air Service First Around the World Flight*. April 6, 1924 to September 28, 1924. Call #167.401-27, IRIS #00120741. Published by Mudge a Ransom in 1965 commemorating the flight. AFHRA, Maxwell AFB AL.

Historical Unpublished Papers

- Mitchell, William. *America, Air Power, and the Pacific*. Call # 168.7419.30, IRIS # 01147594, undated manuscript, AFHRA, Maxwell AFB AL.
- Mitchell, William, M. *The Strategic Key to the World*. Call # 168.7419.30, IRIS # 01147595, undated manuscript, AFHRA, Maxwell AFB AL.

Personal Communications – Interviews/E-Mails

- Beckstead, Doug, Historian, 673rd Air Base Wing History Office, Joint Base Elmendorf-Richardson, Alaska, email and conversation April-May 2012.
- Scott, Ralph, Public Affairs, Missile Defense Agency, Fort Greely, Alaska, email 27 April 2012.
- Smart, Joan, Alaskan Command, Public Affairs, Joint Base Elmendorf-Richardson, email and conversation, March-May 2012.

Public Documents

- House Armed Services Committee. "6 March 2012 Statement of General Charles H. Jacoby, Jr., United States Army, Commander, United States Northern Command and North American Aerospace Defense Command." Armed Services Committee.
http://armedservices.house.gov/index.cfm/files/serve?File_id=41d00c3a-9497-4f95-8c42-f3394d903a68 (accessed 25 April 2012).
- "National Security Strategy, May 2010." The White House.
http://www.whitehouse.gov/sites/default/files/rss_viewer/national_security_strategy.pdf (accessed 14 April 2012).
- Office of Management and Budget. "Fiscal Year 2013 Budget of the US Government." The White House.
<http://www.whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/budget.pdf> (accessed 14 April 2012).
- "Report to Congress on Arctic Operations and the Northwest Passage," Department of Defense, OUSD (Policy), May 2011.
- Sullivan, Dan. "Testimony On 2 June 2011 Before the Us House of Representatives, Subcommittee On Energy and Mineral Resources: National Strategic and Critical Minerals Policy Act and Resource Assessment of Rare Earth Act of 2011." State of Alaska: Alaska Department of Natural Resources.
http://dnr.alaska.gov/commis/priorities/US_Subcommittee_Energy_and_Minerals_REEs.pdf (accessed May 19, 2012).

Reports

- "Alaska Division of Geological and Geophysical Surveys Annual Report 2011." State of Alaska: Alaska Department of Natural Resources.
<http://www.dggs.alaska.gov/webpubs/dggs/ar/text/ar2011.PDF> (accessed 24 April 2012).
- "Alaska QuickFacts." U.S. Census Bureau.
<http://quickfacts.census.gov/qfd/states/02000.html> (accessed 26 February 2012).
- Szumigala, D. J., L. A Harbo, and J. N. Adleman. "Alaska's Mineral Industry 2010 Report." State of Alaska: Alaska Department of Natural Resources.
<http://www.dggs.alaska.gov/webpubs/dggs/sr/text/sr065.PDF> (accessed 24 April 2012).

Staff Studies

- Allen, TSgt William J. "Hunting the Soviet Bear - a Study of Soviet Aircraft Intercepts Near Alaska, 1961-2006." Staff Study provided by 673rd Air Base Wing, History Office, Joint Base Elmendorf-Richardson, Alaska, No Date.
- Baker, TSgt, "A Special Study of the Sale of the White Alice Communications System." Office of Air Force History, 1931st Communications Wing, Elmendorf AFB, Alaska. Call #K-WG-1931-SU-RE, IRIS # 01099470, AFHRA, Maxwell AFB AL.

Speeches

- Rose, Frank A. "A U.S. State Department Perspective On the Phased Adaptive Approach to Missile Defense: Remarks to the Middle East Missile." U.S. Department of State.
<http://www.state.gov/t/avc/rls/187774.htm> (accessed 1 May 2012).

Unit and Staff Office Histories

- Alaskan Air Command Historical Division. "Alaskan Air Command Mission." Alaskan NORAD Region: Regional Historical Report, 1 January-30 June 1962, 1 October 1961. Call # K-484.011-1, IRIS # 01048845. AFHRA, Maxwell AFB AL.
- Alaskan Air Command Historical Division. "Alaskan Air Command Chronology of the Cuban Missile Crisis." *Alaskan NORAD Region, Regional Historical Report, 1 July-31 December 1962, (Document 39)*. 20 October entry. Call # K484.011-1, IRIS # 01048846. AFHRA, Maxwell AFB AL.
- Cloe, John Haile, *The Air Force in Alaska, Part I, Early Flights and Strategic Importance: 1920-1940*. Elmendorf AFB, AK: Office of History, Alaskan Air Command, 1983.
- Cloe, John Haile, *The Air Force in Alaska, Part II, Buildup to Dutch Harbor: June 1940-June 1942*. Elmendorf AFB, AK: Office of History, Alaskan Air Command, 1986.
- History & Research Division, *History of Headquarters Strategic Air Command: 1960, (SAC Historical Study No. 85)*. Call # K416.01-85, IRIS #00502061. AFHRA, Maxwell AFB AL.
- History & Research Division, "Memo: BMEWS Interim Display Facility," *History of Headquarters Strategic Air Command: 1960, (SAC Historical Study No. 83, Volume III)*. 21 Jul 59. Call # K416.01-83, IRIS # 00502057. AFHRA, Maxwell AFB AL.
- USAF Oral History Interview, *Alaskan Command Oral History: 1947-1969*. 19 June 1974. Call # K-239.0512-808, IRIS # 1000803, AFHRA, Maxwell AFB AL.